

**PHILIPS**

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**DVD-870**

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**MODEL**

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**SERVICE MANUAL**

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# Service Service **Service**

# Service Information

## General

Introduction of SD3.x L7 & L8 mono board:

### Changes from L4 to L7

- SDRAM footprint, at pos. 7404 and 7405, has been removed.
- Additional 2 resistors, at pos. 3424 and 3425, used for the 90ns ROM type.
- Relayout to improve EMC.

### Changes from L7 to L8

- Removed mostly jumpers and relayout to improve EMC.

Since the change from L7 to L8 is minimal, only the L8 mono board schematic, layout, and parts list are published.

This service information will supplement the SD3.0 service manual (3122 785 11010) and service information (3122 785 40490).

## Remarks

SD3.x L7 & L8 monoboard has been introduced as a running change during production for the following models:

### VFM2001

- EU models:
  - DVD612/0x2;DVD612S/002;DVD622/0x2;DVD712/0x1;DVD722/0x1;DVD752/0X1;DVD762/0x1;DVD870/0x1;DVD870P/0x1;DVD870L/0x1
- Non-EU models:
  - DVD703/032;DVD703/692;DVD703/752;DVD703/783;DVD712/171;DVD712/172;DVD870P/171

### STEP2001

- EU models:
  - DVD952/0x1;DVDQ40/0x1;DVDQ50/0x1
- Non-EU models:
  - DVDQ50/171; DVDQ50/69x; DVDQ50/75x; DVDQ50/78x

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# PHILIPS

## Spare Parts List

<b>Mechanism</b>		2216	5322 126 11578	1nF 10% 50V 0603	2606	4822 124 12095	100µF 20% 16V	
<b>Various</b>		2226	4822 126 14305	100nF 10% 16V 0603	2607	4822 124 12095	100µF 20% 16V	
0001 9305 023 61104 VAL6011/04		2227	4822 126 14305	100nF 10% 16V 0603	2608	4822 124 23002	10µF 16V	
		2228	4822 126 14305	100nF 10% 16V 0603	2609	4822 124 80151	47µF 16V	
		2229	4822 126 14305	100nF 10% 16V 0603	2610	4822 126 14305	100nF 10% 16V 0603	
<b>Mono PWB</b>		2300	4822 126 14305	100nF 10% 16V 0603	2611	4822 124 12095	100µF 20% 16V	
<b>Various</b>		2301	4822 126 14305	100nF 10% 16V 0603	2612	4822 126 14305	100nF 10% 16V 0603	
1100 2422 025 16543 CON BM H 4P M 2.00 PH SMD R		2302	4822 126 14305	100nF 10% 16V 0603	2613	4822 126 14305	100nF 10% 16V 0603	
1104 2422 025 15963 CON BM H 24P F 0.50 FFC SMD R		2303	4822 124 80349	47µF 20% 6.3V	2614	4822 122 33777	47pF 5% 63V	
1106 2422 025 16158 CON BM H 8P F 1.00 FFC 0.3 R		2304	3198 017 42230	0603 50V 22nF COL	2615	4822 122 33777	47pF 5% 63V	
1205 2422 540 98428 RES CER SM 8M467 CSTCC8.46MHz R		2305	3198 017 42230	0603 50V 22nF COL	2616	4822 122 33777	47pF 5% 63V	
1300 2422 540 98426 RES CER SM 6MHz CSTCC6.00MHz R		2306	4822 124 23002	10µF 16V	2617	4822 122 33777	47pF 5% 63V	
1301 4822 267 51454 CONN. 11P FEMALE		2307	3198 017 42230	0603 50V 22nF COL	2619	4822 126 14305	100nF 10% 16V 0603	
1501 2422 025 16702 CON BM H 5P M 2.00 PH SMD R		2309	4822 126 14305	100nF 10% 16V 0603	2620	4822 122 33777	47pF 5% 63V	
1506 4822 267 60409 CONN 22P FEMALE		2310	4822 126 14305	100nF 10% 16V 0603	2621	4822 122 33777	47pF 5% 63V	
1600 2422 025 16705 CON BM H 12P M 2.00 PH SMD R		2314	4822 126 14305	100nF 10% 16V 0603	2622	4822 122 33777	47pF 5% 63V	
1602 2422 025 16703 CON H 7P M 2.00 PH SMD R		2315	4822 126 14305	100nF 10% 16V 0603	2623	4822 122 33777	47pF 5% 63V	
1603 2422 025 16389 CON BM V 22P F 1.00 FFC 0.3 R		2318	5322 122 33861	120pF 10% 50V	2624	4822 122 33777	47pF 5% 63V	
1604 2422 025 16388 CON BM V 16P F 1.00 FFC 0.3 R		2319	4822 126 11669	27pF	2625	4822 122 33777	47pF 5% 63V	
		2320	4822 126 14305	100nF 10% 16V 0603	2626	4822 122 33777	47pF 5% 63V	
		2321	4822 126 14305	100nF 10% 16V 0603	2627	4822 122 33777	47pF 5% 63V	
		2401	4822 126 14305	100nF 10% 16V 0603	2632	4822 124 12095	100µF 20% 16V	
		2402	4822 126 14305	100nF 10% 16V 0603	2633	4822 124 12095	100µF 20% 16V	
		2403	4822 126 14305	100nF 10% 16V 0603	2634	4822 126 14305	100nF 10% 16V 0603	
		2404	4822 126 14305	100nF 10% 16V 0603	2635	4822 126 14305	100nF 10% 16V 0603	
		2405	4822 126 14305	100nF 10% 16V 0603	2636	4822 126 14305	100nF 10% 16V 0603	
		2406	4822 126 14305	100nF 10% 16V 0603	2637	4822 126 14305	100nF 10% 16V 0603	
		2407	4822 126 14305	100nF 10% 16V 0603	2638	4822 126 14305	100nF 10% 16V 0603	
		2408	4822 126 14305	100nF 10% 16V 0603	2639	4822 126 14305	100nF 10% 16V 0603	
		2409	4822 126 14305	100nF 10% 16V 0603	2641	4822 122 33761	22pF 5% 50V	
		2410	4822 126 14305	100nF 10% 16V 0603	2642	4822 122 33761	22pF 5% 50V	
		2411	4822 126 14305	100nF 10% 16V 0603	2647	4822 124 23002	10pF 16V	
		2412	4822 126 14305	100nF 10% 16V 0603	2648	4822 126 14305	100nF 10% 16V 0603	
		2413	4822 126 14305	100nF 10% 16V 0603				
		2418	4822 124 12095	100pF 20% 16V				
		2419	4822 124 80349	47µF 20% 6.3V				
		2420	4822 124 80349	47µF 20% 6.3V				
		2421	2238 586 59812	0603 50V 100NP80M				
		2422	2238 586 59812	0603 50V 100NP80M				
		2423	4822 126 14305	100nF 10% 16V 0603				
		2424	2238 586 59812	0603 50V 100NP80M				
		2425	2238 586 59812	0603 50V 100NP80M				
		2426	4822 126 14305	100nF 10% 16V 0603				
		2427	4822 126 14305	100nF 10% 16V 0603				
		2500	4822 126 14305	100nF 10% 16V 0603				
		2503	4822 126 14305	100nF 10% 16V 0603				
		2504	3198 030 74780	EL SM 35V 4U7 PM20 COL R				
		2507	4822 126 14494	22nF 10% 25V 0603				
		2509	4822 124 23002	10pF 16V				
		2510	4822 126 14305	100nF 10% 16V 0603				
		2511	4822 124 23002	10µF 16V				
		2512	4822 126 14305	100nF 10% 16V 0603				
		2513	4822 122 33761	22pF 5% 50V				
		2514	4822 122 33761	22pF 5% 50V				
		2515	4822 122 33761	22pF 5% 50V				
		2516	4822 122 33761	22pF 5% 50V				
		2517	4822 126 14305	100nF 10% 16V 0603				
		2518	3198 030 74780	EL SM 35V 4U7 PM20 COL R				
		2519	4822 126 14305	100nF 10% 16V 0603				
		2520	4822 126 14305	100nF 10% 16V 0603				
		2521	4822 126 14305	100nF 10% 16V 0603				
		2522	4822 126 14305	100nF 10% 16V 0603				
		2523	4822 126 14305	100nF 10% 16V 0603				
		2524	4822 126 14305	100nF 10% 16V 0603				
		2525	4822 126 14305	100nF 10% 16V 0603				
		2526	4822 126 14305	100nF 10% 16V 0603				
		2527	4822 126 14305	100nF 10% 16V 0603				
		2528	4822 126 14305	100nF 10% 16V 0603				
		2529	3198 030 74780	EL SM 35V 4U7 PM20 COL R				
		2530	4822 126 14305	100nF 10% 16V 0603				
		2531	4822 126 14305	100nF 10% 16V 0603				
		2532	4822 122 33777	47pF 5% 63V				
		2533	4822 122 33777	47pF 5% 63V				
		2534	5322 126 11578	1nF 10% 50V 0603				
		2535	5322 126 11578	1nF 10% 50V 0603				
		2536	4822 126 14305	100nF 10% 16V 0603				
		2537	4822 126 14305	100nF 10% 16V 0603				
		2538	4822 126 14305	100nF 10% 16V 0603				
		2539	4822 126 14305	100nF 10% 16V 0603				
		2540	4822 126 14305	100nF 10% 16V 0603				
		2600	4822 126 14494	22nF 10% 25V 0603				
		2601	4822 126 14247	0603 50V 1N5 COL R				
		2602	4822 126 14247	0603 50V 1N5 COL R				
		2603	4822 126 14305	100nF 10% 16V 0603				
		2604	4822 124 12095	100µF 20% 16V				
		2605	4822 126 14494	22nF 10% 25V 0603				
		-WW-						
		3100	4822 117 11152	4Ω7 5%				
		3102	5322 117 13034	1k5 1% 0.063W 0603 RC22H				
		3103	5322 117 13034	1k5 1% 0.063W 0603 RC22H				
		3104	5322 117 13062	390Ω 1% 0.063W 0603 RC22H				
		3105	4822 051 30103	10k 5% 0.062W				
		3106	4822 051 30479	47Ω 5% 0.062W				
		3107	4822 051 20228	2Ω2 5% 0.1W				
		3108	4					

3158	5322 117 13017	100Ω 1% 0.063W 0603	RC22H	3265	4822 051 30472	4k7 5% 0.062W	3611	4822 051 30103	10k 5% 0.062W
3160	4822 051 30101	100Ω 5% 0.062W		3266	4822 117 13632	100k 1% 0603 0.62W	3612	4822 051 30103	10k 5% 0.062W
3161	4822 117 13613	2k2 5% 0603		3300	4822 117 11152	4Ω7 5%	3613	4822 051 30103	10k 5% 0.062W
3162	4822 051 30101	100Ω 5% 0.062W		3301	4822 051 30105	1M 5% 0.062W	3614	4822 051 30103	10k 5% 0.062W
3163	4822 051 30273	27k 5% 0.062W		3302	4822 051 30221	220Ω 5% 0.062W	3615	4822 051 30103	10k 5% 0.062W
3164	4822 117 13613	2Ω2 5% 0603		3304	4822 051 30272	2k7 5% 0.062W	3616	4822 051 30472	4k7 5% 0.062W
3165	5322 117 13063	120Ω 1% 0.063W 0603	RC22H	3305	4822 051 30272	2k7 5% 0.062W	3617	4822 051 30472	4k7 5% 0.062W
3166	4822 051 30393	39k 5% 0.062W		3309	4822 051 30103	10k 5% 0.062W	3618	4822 051 30223	22k 5% 0.062W
3167	4822 051 30101	100Ω 5% 0.062W		3310	4822 051 30223	22k 5% 0.062W	3619	4822 051 30223	22k 5% 0.062W
3168	5322 117 13047	330Ω 1% 0.063W 0603	RC22H	3311	4822 051 30101	100Ω 5% 0.062W	3620	4822 051 30101	100Ω 5% 0.062W
3169	4822 051 30101	100Ω 5% 0.062W		3312	4822 051 30472	4k7 5% 0.062W	3621	4822 051 30101	100Ω 5% 0.062W
3170	4822 051 30101	100Ω 5% 0.062W		3313	4822 051 30472	4k7 5% 0.062W	3622	4822 051 30101	100Ω 5% 0.062W
3171	4822 051 30101	100Ω 5% 0.062W		3316	4822 051 20108	1Ω 5% 0.1W	3623	4822 051 30101	100Ω 5% 0.062W
3172	4822 117 13632	100k 1% 0603 0.62W		3317	4822 051 20108	1Ω 5% 0.1W	3624	4822 051 30101	100Ω 5% 0.062W
3173	4822 117 13632	100k 1% 0603 0.62W		3318	4822 051 30472	4k7 5% 0.062W	3625	4822 051 30101	100Ω 5% 0.062W
3174	4822 117 11152	4Ω7 5%		3319	4822 051 30479	47Ω 5% 0.062W	3626	4822 051 30102	1k 5% 0.062W
3175	4822 117 13613	2Ω2 5% 0603		3320	4822 051 30472	4k7 5% 0.062W	3627	4822 051 30471	47Ω 5% 0.062W
3176	4822 051 30153	15k 5% 0.062W		3321	4822 051 30682	6k8 5% 0.062W	3628	4822 051 30471	47Ω 5% 0.062W
3178	4822 117 11151	1Ω 5%		3322	5322 117 13026	4k7 1% 0.063W 0603 RC22H	3629	4822 051 30472	4k7 5% 0.062W
3179	4822 051 30221	220Ω 5% 0.062W		3323	5322 117 13026	4k7 1% 0.063W 0603 RC22H	3630	4822 051 30221	220Ω 5% 0.062W
3180	4822 117 13632	100k 1% 0603 0.62W		3326	4822 051 30479	47Ω 5% 0.062W	3631	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3181	4822 051 30561	56Ω 5% 0.062W		3327	4822 051 30682	6k8 5% 0.062W	3632	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3182	5322 117 13018	1k0 1% 0.063W 0603 RC22H		3328	4822 051 30223	22k 5% 0.062W	3633	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3183	5322 117 13017	100Ω 1% 0.063W 0603	RC22H	3329	4822 051 30223	22k 5% 0.062W	3635	4822 051 30682	6k8 5% 0.062W
3184	2322 704 61204			3331	4822 051 30332	3k3 5% 0.062W	3636	4822 051 30682	6k8 5% 0.062W
3185	4822 117 11151	1Ω 5%		3332	4822 051 30332	3k3 5% 0.062W	3637	4822 051 30332	3k3 5% 0.062W
3187	4822 051 30273	27k 5% 0.062W		3333	4822 051 30101	100Ω 5% 0.062W	3642	4822 051 30103	10k 5% 0.062W
3189	4822 051 30008	0Ω jumper		3334	4822 051 30101	100Ω 5% 0.062W	3647	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3190	4822 051 30008	0Ω jumper		3335	4822 051 30101	100Ω 5% 0.062W	3648	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3191	4822 051 30008	0Ω jumper		3336	4822 051 30101	100Ω 5% 0.062W	3651	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3192	4822 051 30008	0Ω jumper		3337	4822 051 30101	100Ω 5% 0.062W	3654	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3193	4822 051 30008	0Ω jumper		3338	4822 051 30101	100Ω 5% 0.062W	3655	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3194	4822 051 30008	0Ω jumper		3339	4822 051 30008	0Ω jumper	3656	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3195	4822 051 30008	0Ω jumper		3340	4822 051 30008	0Ω jumper	3657	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3197	4822 051 30008	0Ω jumper		3341	4822 051 30101	100Ω 5% 0.062W	3658	4822 051 30102	1k 5% 0.062W
3198	5322 117 13049	47Ω 1% 0.063W 0603	RC22H	3403	4822 051 30103	10k 5% 0.062W	3659	4822 051 30102	1k 5% 0.062W
3199	5322 117 13042	3k9 1% 0.063W 0603 RC22H		3404	4822 051 30103	10k 5% 0.062W	3660	4822 051 30102	1k 5% 0.062W
3200	4822 051 30103	10k 5% 0.062W		3412	4822 051 30008	0Ω jumper	3661	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3201	4822 117 11151	1Ω 5%		3414	4822 051 30008	0Ω jumper	3662	4822 051 30102	1k 5% 0.062W
3202	4822 117 11151	1Ω 5%		3416	4822 051 30008	0Ω jumper	3663	4822 051 30102	1k 5% 0.062W
3203	4822 051 30105	1M 5% 0.062W		3419	4822 051 30103	10k 5% 0.062W	3664	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3204	4822 051 30331	330Ω 5% 0.062W		3424	4822 051 30008	0Ω jumper	3665	4822 117 12139	22Ω 5% 0.062W
3205	4822 051 30103	10k 5% 0.062W		3500	4822 051 30332	3k3 5% 0.062W	3666	4822 051 30102	1k 5% 0.062W
3206	4822 051 30103	10k 5% 0.062W		3501	4822 051 30332	3k3 5% 0.062W	3667	4822 051 30102	1k 5% 0.062W
3208	4822 051 30272	2k7 5% 0.062W		3502	4822 051 30223	22k 5% 0.062W	3668	4822 051 30331	330Ω 5% 0.062W
3209	4822 051 30472	4k7 5% 0.062W		3505	4822 051 30103	10k 5% 0.062W	3669	4822 051 30331	330Ω 5% 0.062W
3210	4822 051 30392	3k9 5% 0.063W 0603		3506	4822 051 30472	4k7 5% 0.062W	3670	4822 051 30681	680Ω 5% 0.062W
3211	4822 051 30472	4k7 5% 0.062W		3508	4822 051 30332	3k3 5% 0.062W	3671	4822 051 30681	680Ω 5% 0.062W
3212	4822 117 11152	4Ω7 5%		3509	4822 051 30103	10k 5% 0.062W	3672	4822 051 30479	47Ω 5% 0.062W
3213	4822 117 11152	4Ω7 5%		3512	4822 051 30103	10k 5% 0.062W	3673	4822 051 30008	0Ω jumper
3214	4822 051 30392	3k9 5% 0.063W 0603		3513	4822 051 30103	10k 5% 0.062W	3674	4822 051 30008	0Ω jumper
3215	4822 051 30103	10k 5% 0.062W		3514	4822 051 30103	10k 5% 0.062W	3675	4822 051 30008	0Ω jumper
3219	4822 051 30103	10k 5% 0.062W		3515	4822 051 30103	10k 5% 0.062W	3676	4822 051 30008	0Ω jumper
3220	4822 051 30103	10k 5% 0.062W		3517	4822 051 30332	3k3 5% 0.062W	3677	4822 051 30008	0Ω jumper
3221	4822 051 30103	10k 5% 0.062W		3518	4822 051 30332	3k3 5% 0.062W	3678	4822 051 30008	0Ω jumper
3224	4822 051 30151	15Ω 5% 0.062W		3519	4822 051 30103	10k 5% 0.062W	3679	4822 051 30008	0Ω jumper
3225	2322 704 62004			3520	4822 051 30332	3k3 5% 0.062W	3680	4822 051 30008	0Ω jumper
3226	4822 051 30103	10k 5% 0.062W		3521	4822 117 13613	2Ω2 5% 0.063	3681	4822 051 30223	22k 5% 0.062W
3227	4822 051 30472	4k7 5% 0.062W		3522	4822 117 13613	2Ω2 5% 0.063	3682	4822 051 30223	22k 5% 0.062W
3229	4822 051 30123	12k 5% 0.062W		3523	4822 051 30101	100Ω 5% 0.062W	3688	4822 051 30472	4k7 5% 0.062W
3230	4822 051 30103	10k 5% 0.062W		3524	4822 051 30101	100Ω 5% 0.062W	3689	4822 051 30223	22k 5% 0.062W
3231	4822 051 30103	10k 5% 0.062W		3525	4822 051 30101	100Ω 5% 0.062W	3690	4822 051 30331	330Ω 5% 0.062W
3232	4822 117 13613	2Ω2 5% 0603		3530	2322 704 61303	RST SM 0603 RC22H 13k PM1 R	3691	4822 051 30681	680Ω 5% 0.062W
3234	4822 117 12902	8k2 1% 0.063W 0603		3531	2322 704 61303	RST SM 0603 RC22H 13k PM1 R	3692	4822 051 30681	680Ω 5% 0.062W
3235	4822 117 13632	100k 1% 0603 0.62W		3532	4822 051 30101	100Ω 5% 0.062W	3705	4822 051 30103	10k 5% 0.062W
3236	4822 051 30472	4k7 5% 0.062W		3533	5322 117 13042	3k9 1% 0.063W 0603 RC22H	3706	4822 051 30103	10k 5% 0.062W
3237	4822 051 30103	10k 5% 0.062W		3534	5322 117 13042	3k9 1% 0.063W 0603 RC22H	3707	4822 051 30472	4k7 5% 0.062W
3238	4822 051 30103	10k 5% 0.062W		3535	4822 051 30103	10k 5% 0.062W	3708	4822 051 30008	0Ω jumper
3239	4822 051 30008	0Ω jumper		3537	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3240	4822 051 30103	10k 5% 0.062W		3571	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3242	4822 051 30008	0Ω jumper		3572	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3243	4822 051 30008	0Ω jumper		3580	4822 117 13573	NETW 4 X 47Ω 5% MNR14	5200	4822 157 11717	BLM31P500SPT
3246	4822 051 30008	0Ω jumper		3581	4822 117 13573	NETW 4 X 47Ω 5% MNR14	5300	4822 157 11717	BLM31P500SPT
3247	4822 051 30008	0Ω jumper		3583	4822 051 30008	0Ω jumper	5301	4822 157 11717	BLM31P500SPT
3249	4822 051 30008	0Ω jumper		3588	4822 051 30332	3k3 5% 0.062W	5402	4822 157 11499	BLM1

5607	4822 157 70651	12µH (NL322522T-120J)
5608	4822 157 70651	12µH (NL322522T-120J)
5609	4822 157 11717	BLM31P500SPT
5610	4822 157 11717	BLM31P500SPT
5611	4822 157 11717	BLM31P500SPT
5613	4822 157 11717	BLM31P500SPT
5614	4822 157 11717	BLM31P500SPT

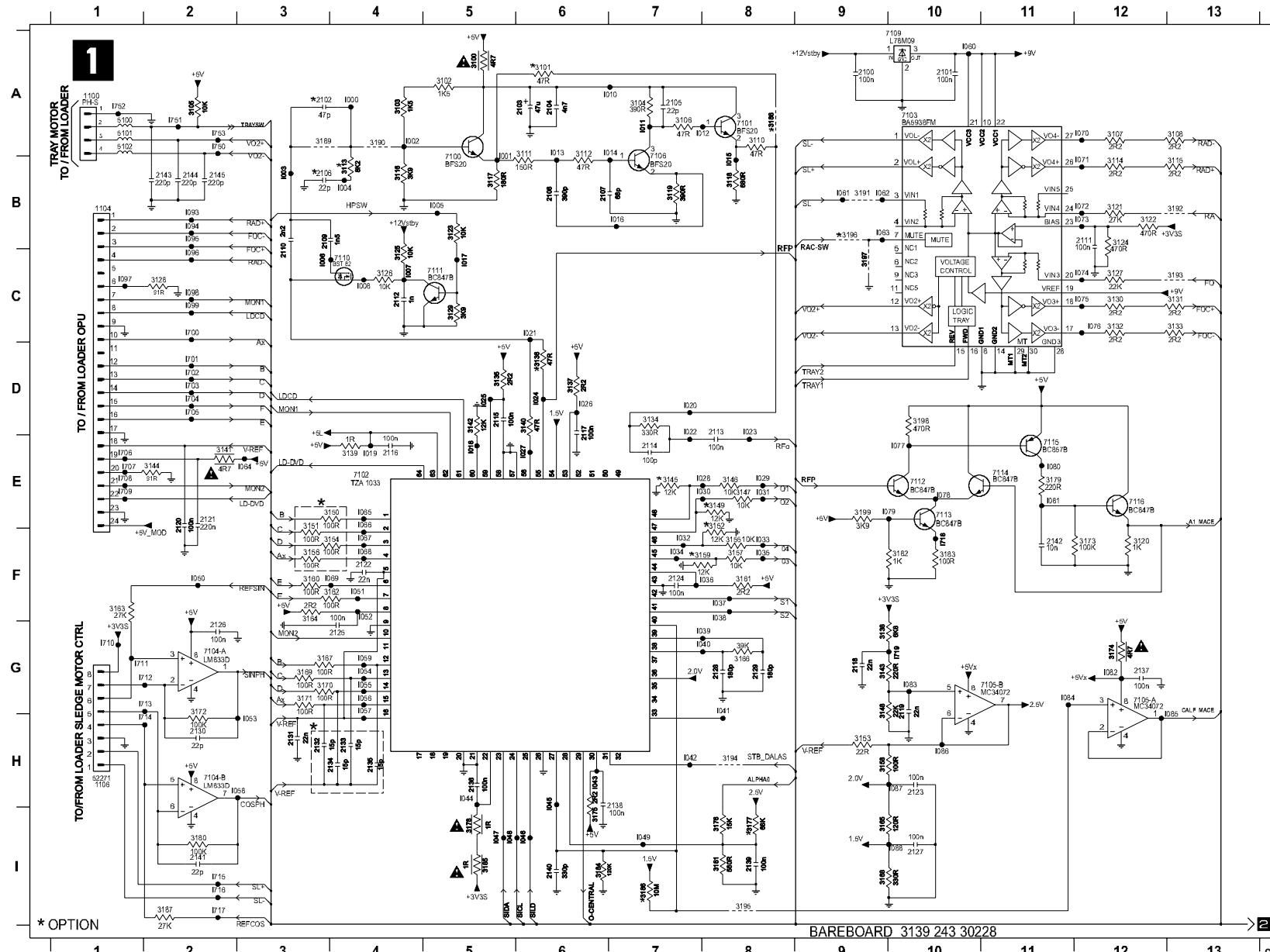
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6301	9322 128 69685	S1D
6302	9322 128 69685	S1D
6303	9322 128 69685	S1D
6600	9322 154 46685	DIO REC SM RB501V-40 (RHMO) R

7100	5322 130 42718	BFS20
7101	5322 130 42718	BFS20
7102	9352 637 37518	TZA1033HL
7103	4822 209 17229	BA6938FM
7104	4822 209 30095	LM833D
7105	4822 209 32073	MC34072D
7106	5322 130 42718	BFS20
7109	4822 209 15083	AN78M09
7109	9322 136 29668	L78M09CDT
7110	5322 130 60803	BST72A
7111	4822 130 60511	BC847B
7112	4822 130 60511	BC847B
7113	4822 130 60511	BC847B
7114	4822 130 60511	BC847B
7115	4822 130 60373	BC856B
7116	4822 130 60511	BC847B
7201	9351 869 80118	74HCT573DB
7202	3104 123 85860	AM29F002T/5.1.14
7203	4822 130 60373	BC856B
7207	4822 209 17231	SAA7399HL
7208	9322 139 67685	IC SM MC33464N-45A (MOTA) R
7208	9322 163 27685	IC SM NCP301LSN45 (ONSE) R
7209	4822 209 90927	L78L05ACD
7210	5322 130 60845	BC807-25
7211	4822 130 42804	BC817-25
7304	4822 209 16877	BA6856FP
7304	9322 139 85668	BA6665FM
7310	4822 209 15899	CY7C199-15C
7311	9352 622 13557	SAA7335HL
7312	4822 130 60373	BC856B
7315	4822 130 60511	BC847B
7316	9352 500 20118	IC SM 74LVC08AD (PHSE) R
7317	9352 500 20118	IC SM 74LVC08AD (PHSE) R
7407	9322 166 67668	IC SM MT48LC4M16A2TG- 7E(MRNO)R
7501	4822 130 60511	BC847B
7503	9322 167 96671	IC SM STI5508AVB (ST00) Y
7503	9322 169 81671	STI5508EVB
7504	2722 171 08709	OSC XTL SM 27MHZ 120P FXO-31 R
7505	9322 156 81668	M24C32-WMN6TNKSA
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7507	5322 130 63289	BSN20
7600	5322 209 71568	PC74HCT14T
7601	9322 142 88668	IC SM LF25CDT (ST00) R
7602	9322 142 88668	IC SM LF25CDT (ST00) R
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7605	4822 209 17398	LD1117DT33
7607	4822 130 60511	BC847B
7608	4822 130 60373	BC856B
7609	4822 130 60373	BC856B
7610	4822 130 60511	BC847B
7611	9352 456 80115	74HCT1G125GW
7612	4822 130 60511	BC847B
7613	4822 130 60511	BC847B
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7620	4822 130 60373	BC856B
7621	4822 130 42804	BC817-25
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7632	4822 130 60511	BC847B

# **Electrical Diagrams and Print-Layouts**

## **Monoboard**

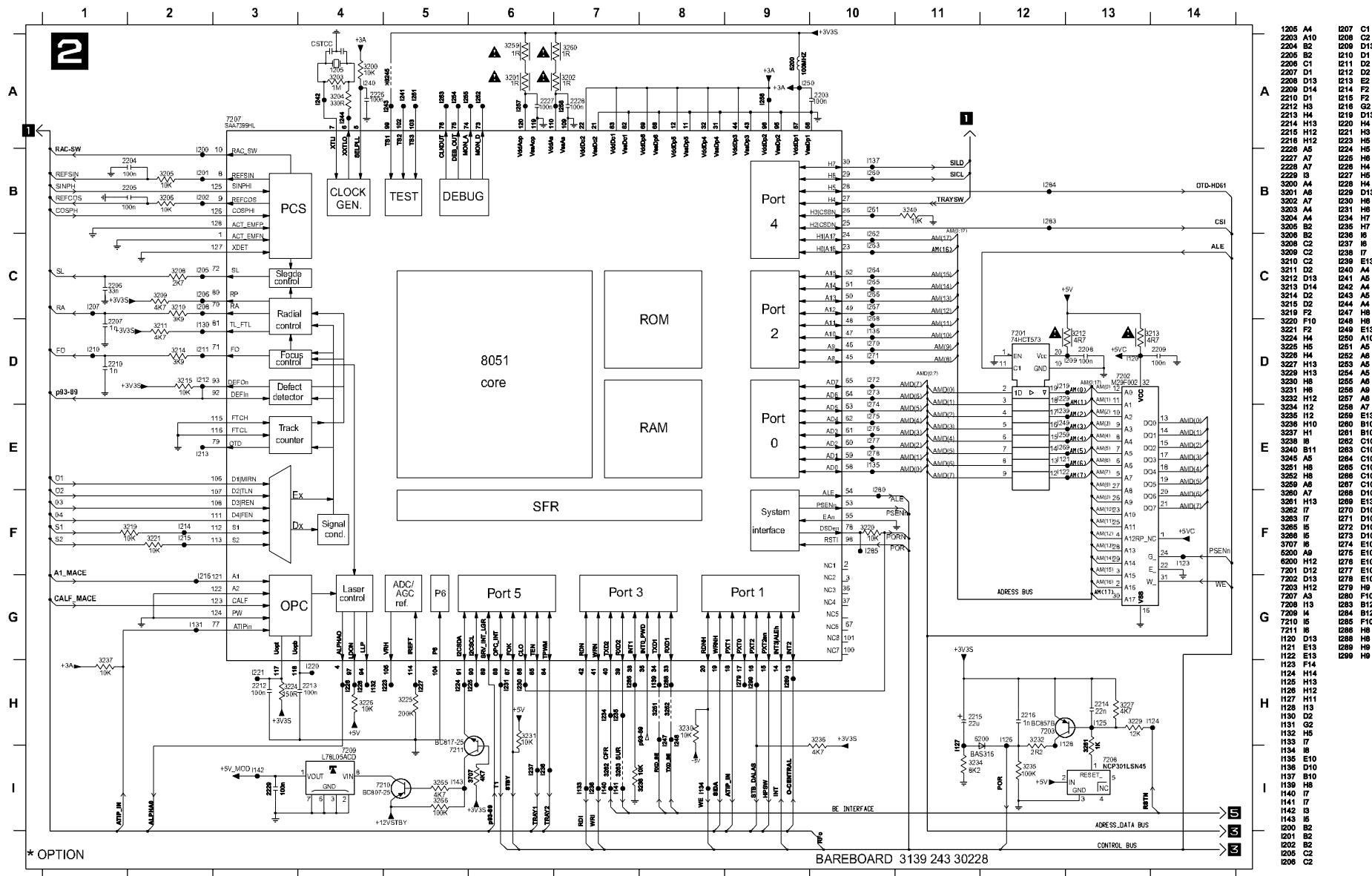


\* OPTION

BAREBOARD 3139 243 30228

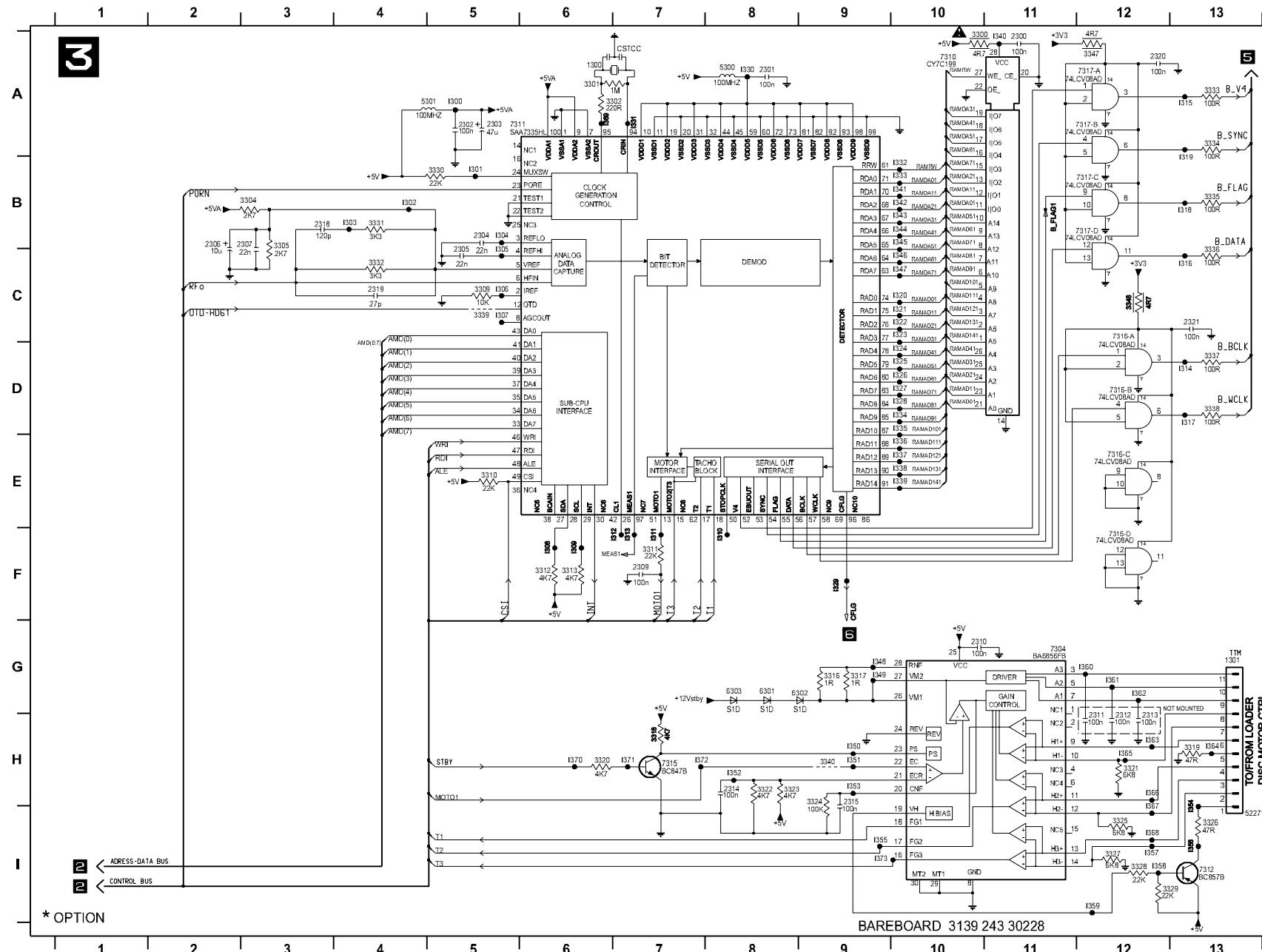
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## **Monoboard**



\* OPTION

## **Monoboard**

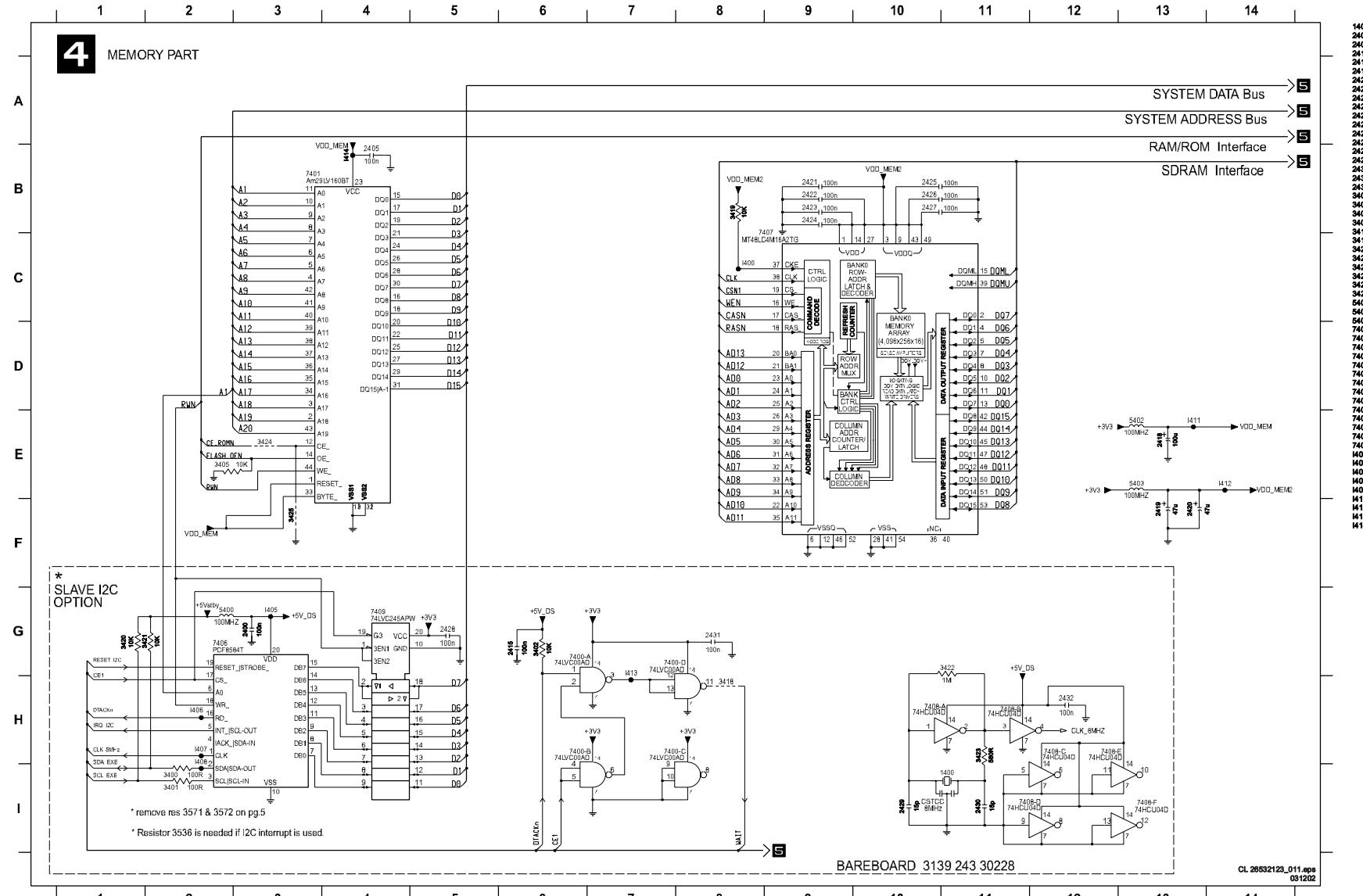


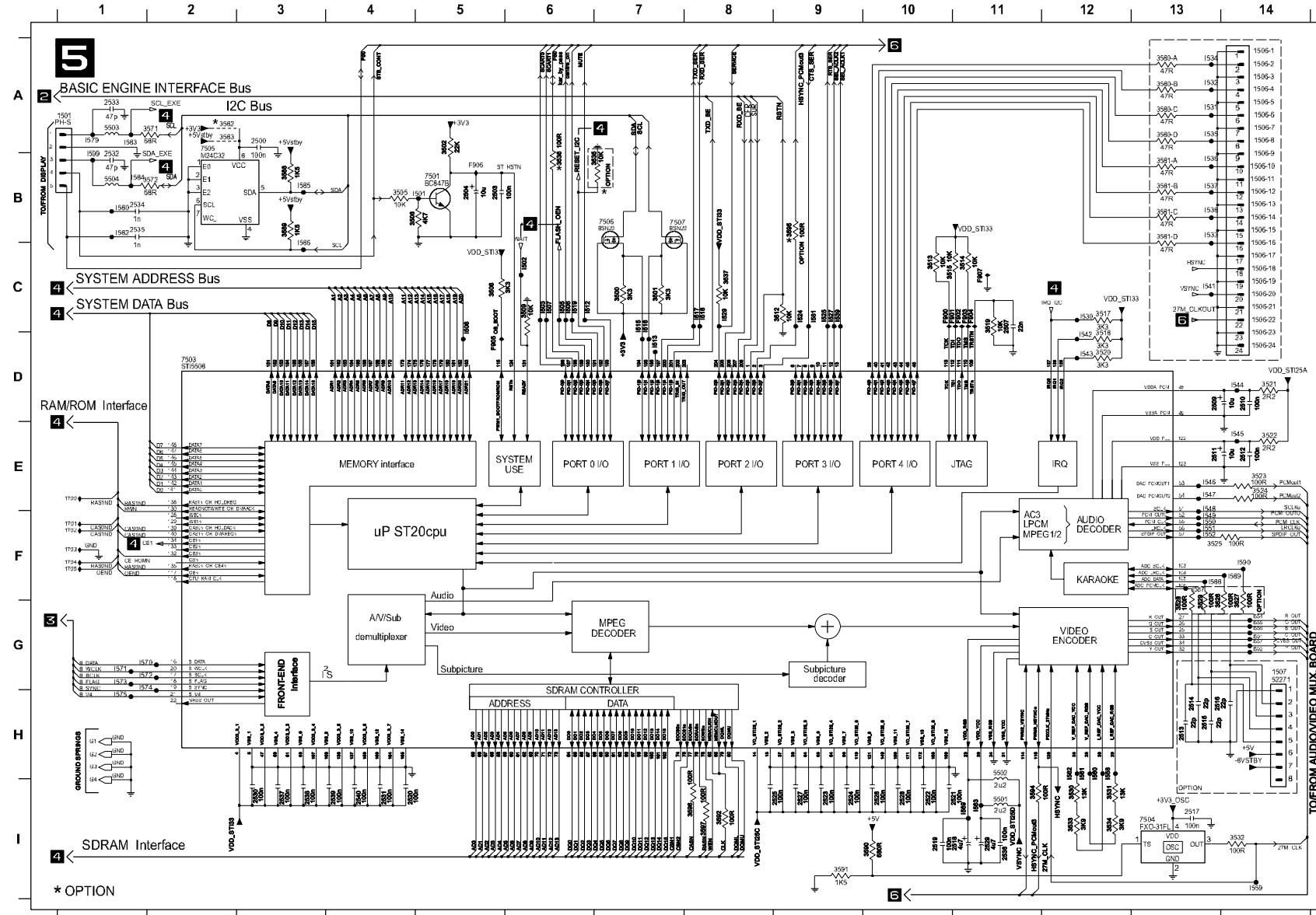
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BAREBOARD 3139 243 3022

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031202

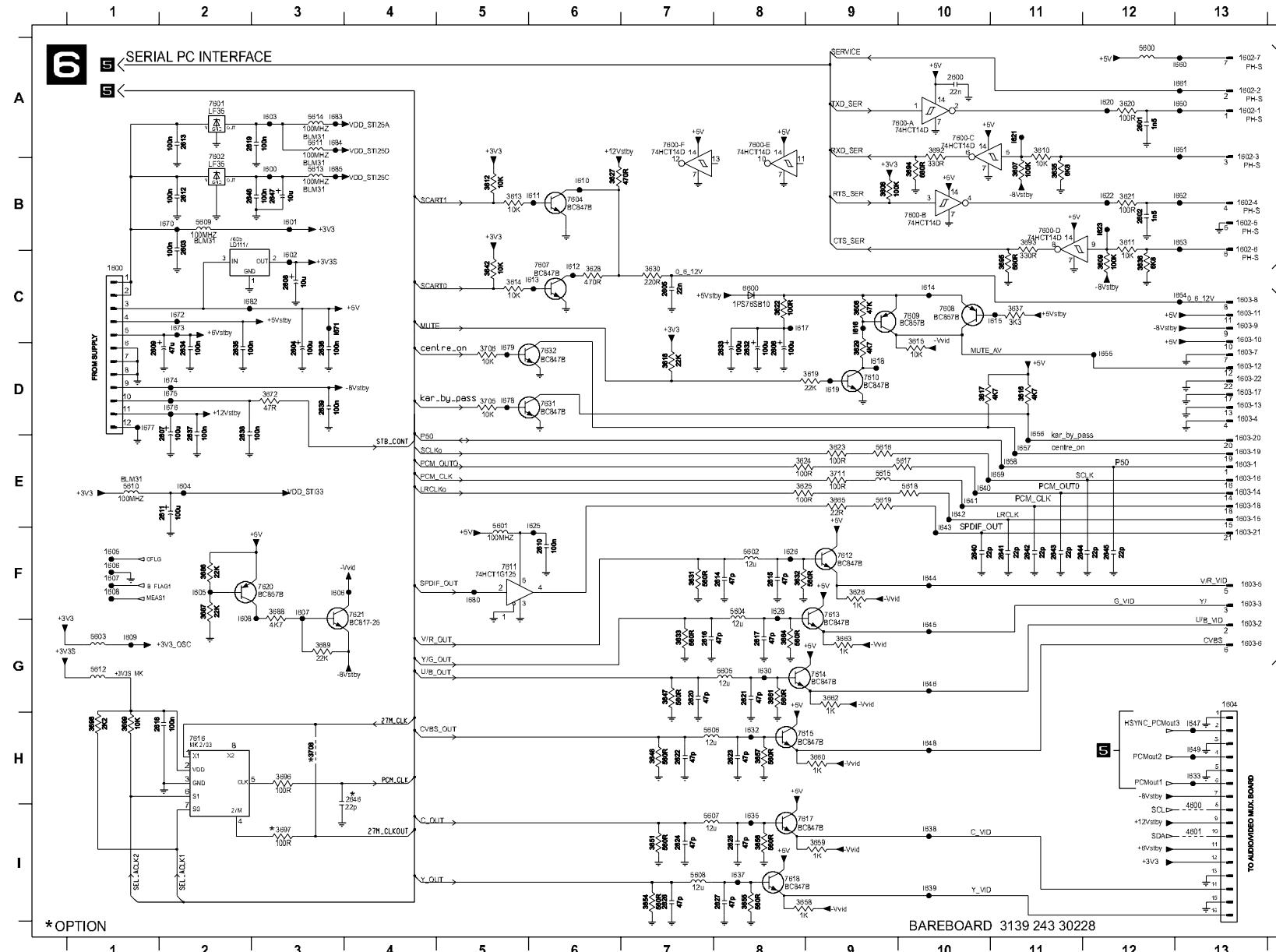
## **Monoboard**



**Monoboard**

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G2 H1	3591 I9
G3 H1	3592 I8
G4 H1	3593 I11
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I506-1 A1	3596 I8
I506-1 B1	3597 I7
I506-12 B14	3598 I11
I506-13 B14	3599 I11
I506-14 B1	3600 A1
I506-15 B14	3601 B5
I506-16 C14	3602 D2
I506-17 C14	3603 D3
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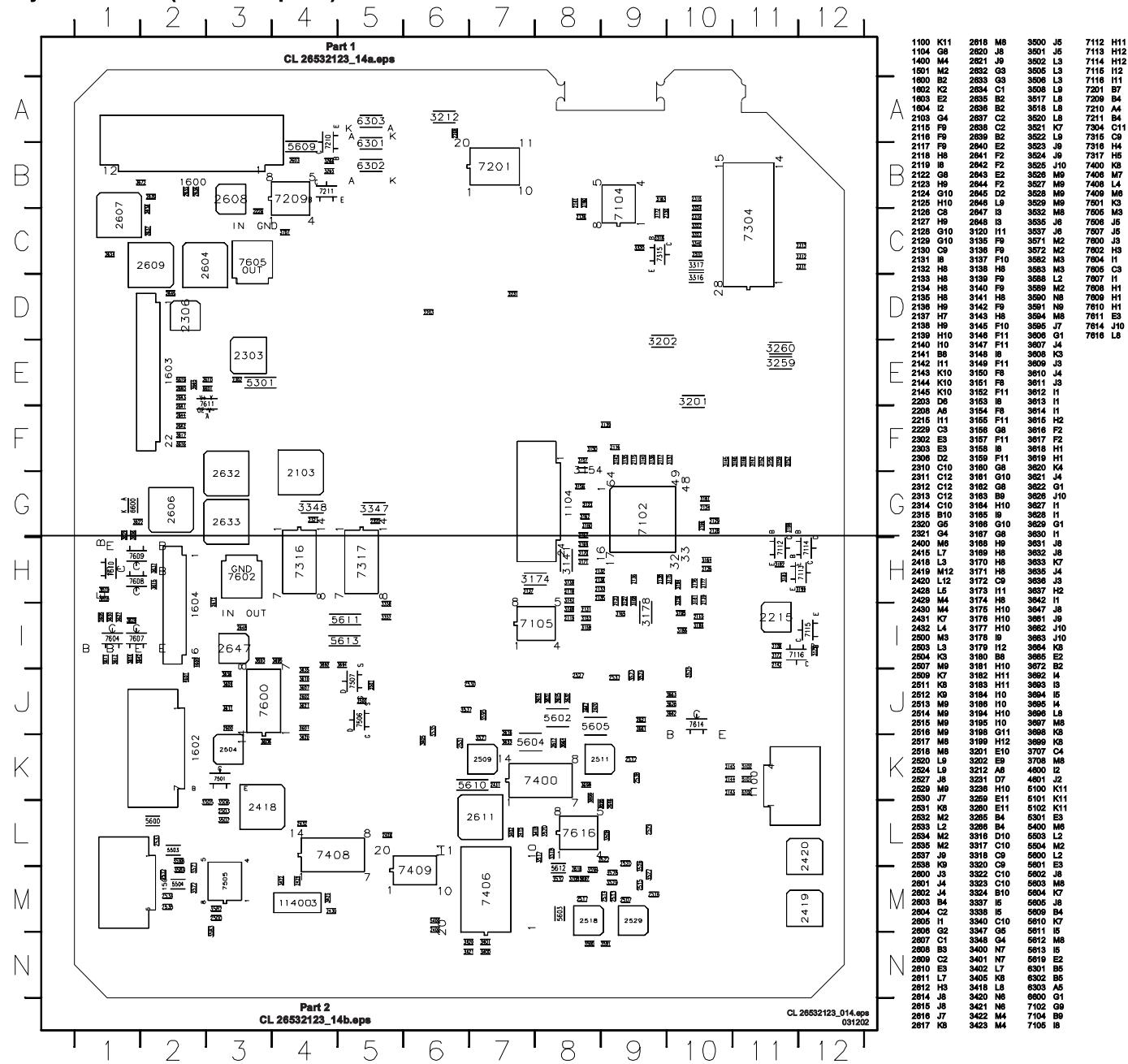
## Monoboard



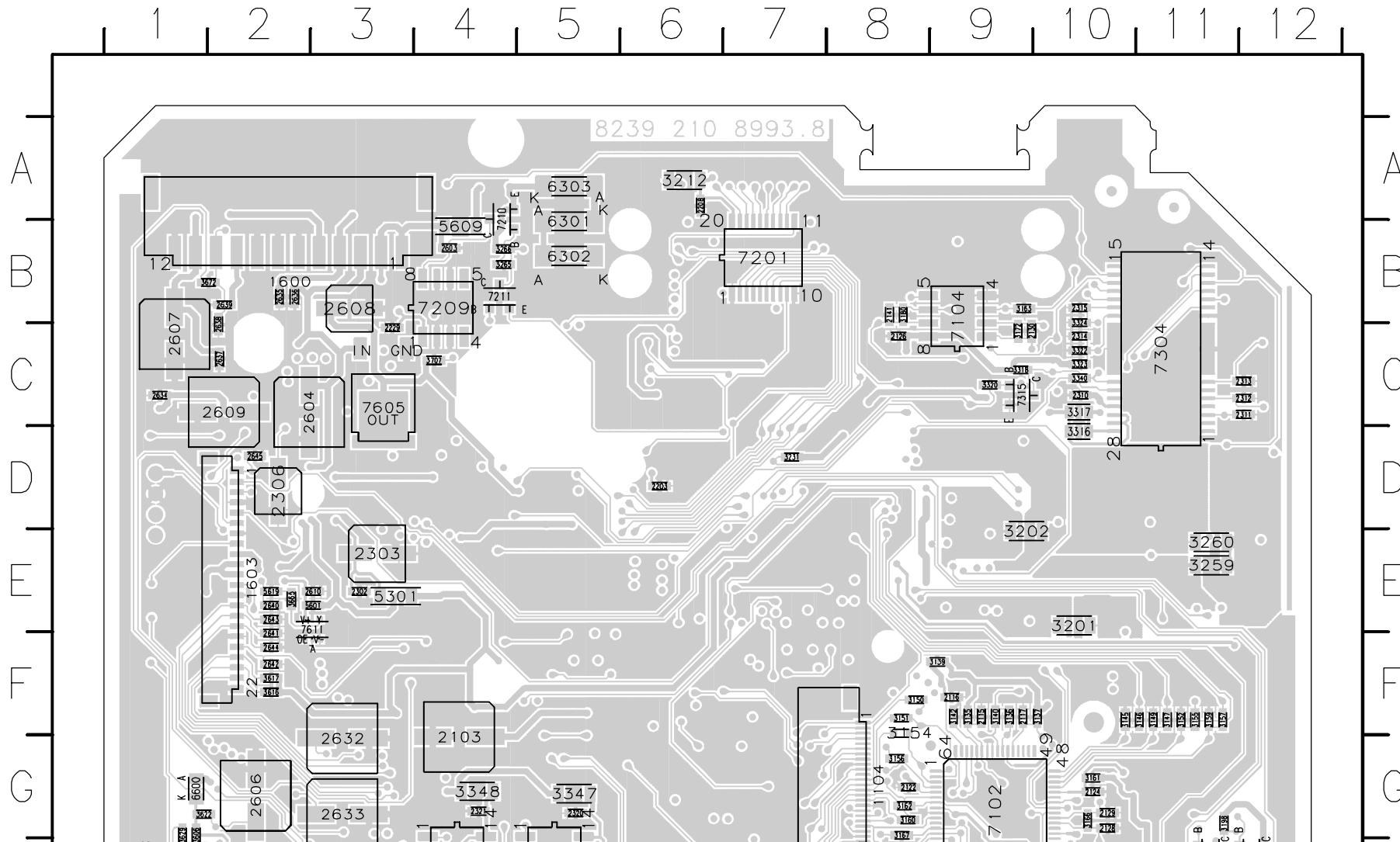
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1603 1 E13	3664 G5
1603-10 C13	3665 E9
1603-11 C13	3672 D3
1603-12 C13	3673 D3
1603-13 C13	3687 F2
1603-14 E13	3688 F3
1603-15 E13	3689 F3
1603-16 E13	3692 A10
1603-17 D13	3693 B11
1603-18 E13	3694 B10
1603-19 E13	3695 B10
1603-20 E13	3697 I3
1603-21 F13	3698 H1
1603-22 F13	3699 H1
1603-3 H13	3705 D5
1603-4 D13	3706 D5
1603-5 D13	3707 D5
1603-6 D13	3711 E9
1603-7 D13	4600 H3
1603-8 C13	4601 H3
1604 G13	5081 F5
1605 F1	5082 F5
1606 F1	5083 G1
1607 F1	5084 G1
1608 F1	5085 G5
2600 A16	5086 H7
2601 A12	5087 I7
2602 A12	5088 I7
2603 B2	5089 B2
2604 D3	5091 E10
2605 C7	5092 G1
2606 D5	5093 G1
2607 D2	5094 B3
2608 C3	5094 A3
2609 D1	5095 E9
2610 F6	5096 E9
2611 E2	5097 E10
2612 B2	5098 E10
2613 C5	6000 C5
2614 F5	6000 A9
2615 F5	6000 B10
2616 G7	6000 C10
2617 G5	6000 D11
2618 H1	6000 D11
2619 A2	7000 E48
2620 G7	7000 F47
2621 G5	7001 A2
2622 H7	7002 B2
2623 H5	7002 B6
2624 C5	7003 C5
2625 I5	7007 C5
2626 I7	7005 C10
2627 D9	7005 C10
2628 D9	7010 D9
2633 D5	7011 F5
2634 D2	7012 F9
2635 D2	7013 F9
2636 D3	7014 G9
2637 D2	7015 H6
2638 D5	7016 H2
2639 D5	7016 I8
2640 F10	7018 B5
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2642 F11	7021 F4
2643 F11	7022 F4
2644 F11	7023 F4
2645 F12	7023 D6
2646 F12	7024 B3
2647 B3	7024 B3
2648 B2	7025 A3
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3607 C9	1605 E2
3608 B9	1606 F3
3609 C12	1607 F3
3610 A11	1608 G2
3611 A12	1609 G2
3612 B5	1610 B6
3613 B5	1611 B6
3614 C5	1612 C6
3615 D10	1613 C6
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3618 D11	1616 C11
3619 D9	1617 C5
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3622 C12	1620 D9
3623 E9	1621 A11
3624 E8	1622 B12
3625 E8	1623 B12
3626 F9	1624 B12
3627 B6	1626 F5
3628 C6	1628 F5
3629 C6	1629 F5
3630 C7	1630 G3
3631 F7	1633 H13
3632 F8	1635 F8
3633 F7	1637 F7
3635 E9	1638 H10
3636 C11	1639 H10
3637 C11	1640 E10
3638 C11	1641 E10
3647 G7	1642 E10
3648 H7	1643 F10
3654 I7	1645 G10
3655 I5	1646 G10

The components in the "Option A" block ie. x'tor 7630, res. 3700, 3701 are not required anymore.  
It was originally used in the Gapfiller project.

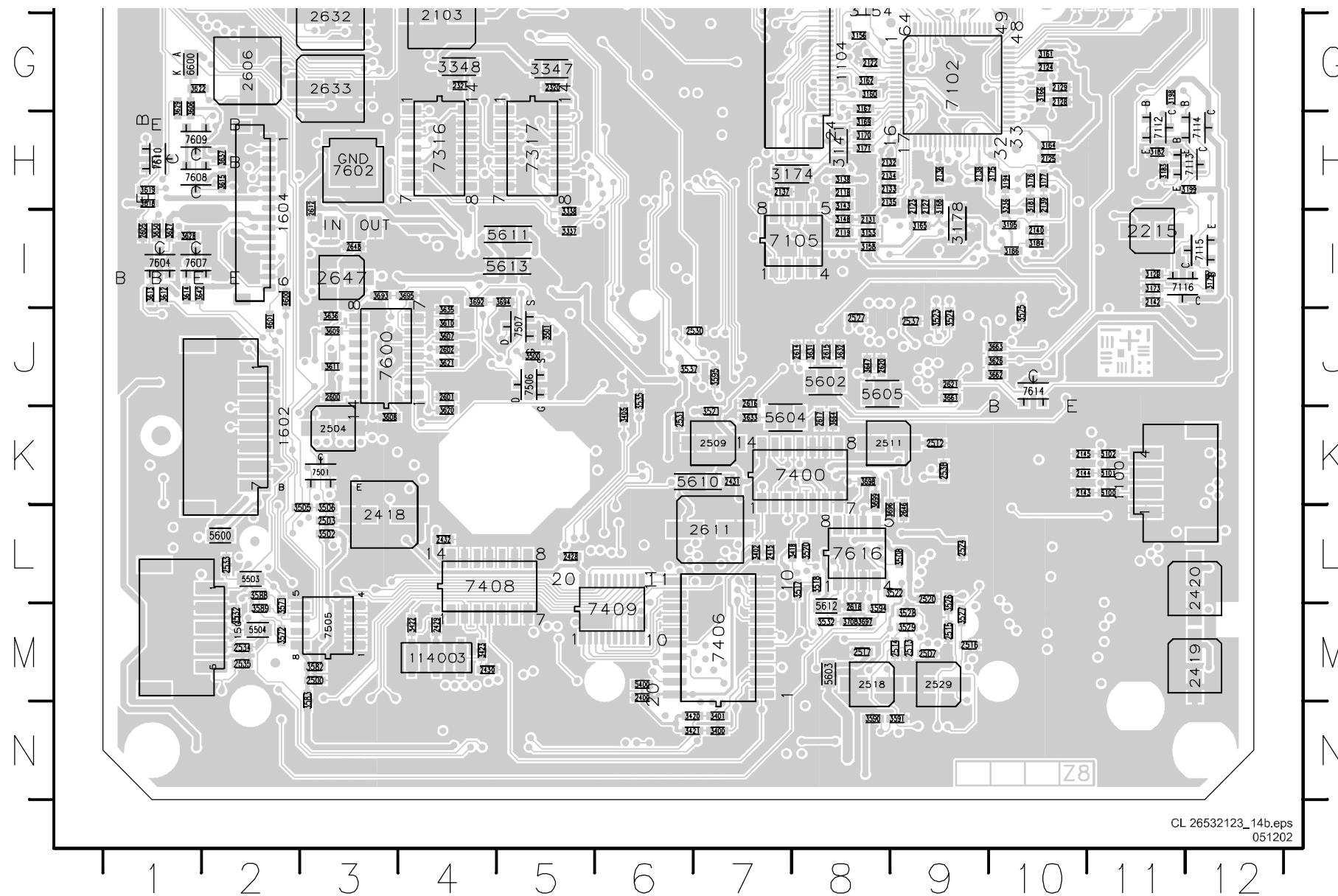
## **Layout Monoboard (Overview Top Side)**



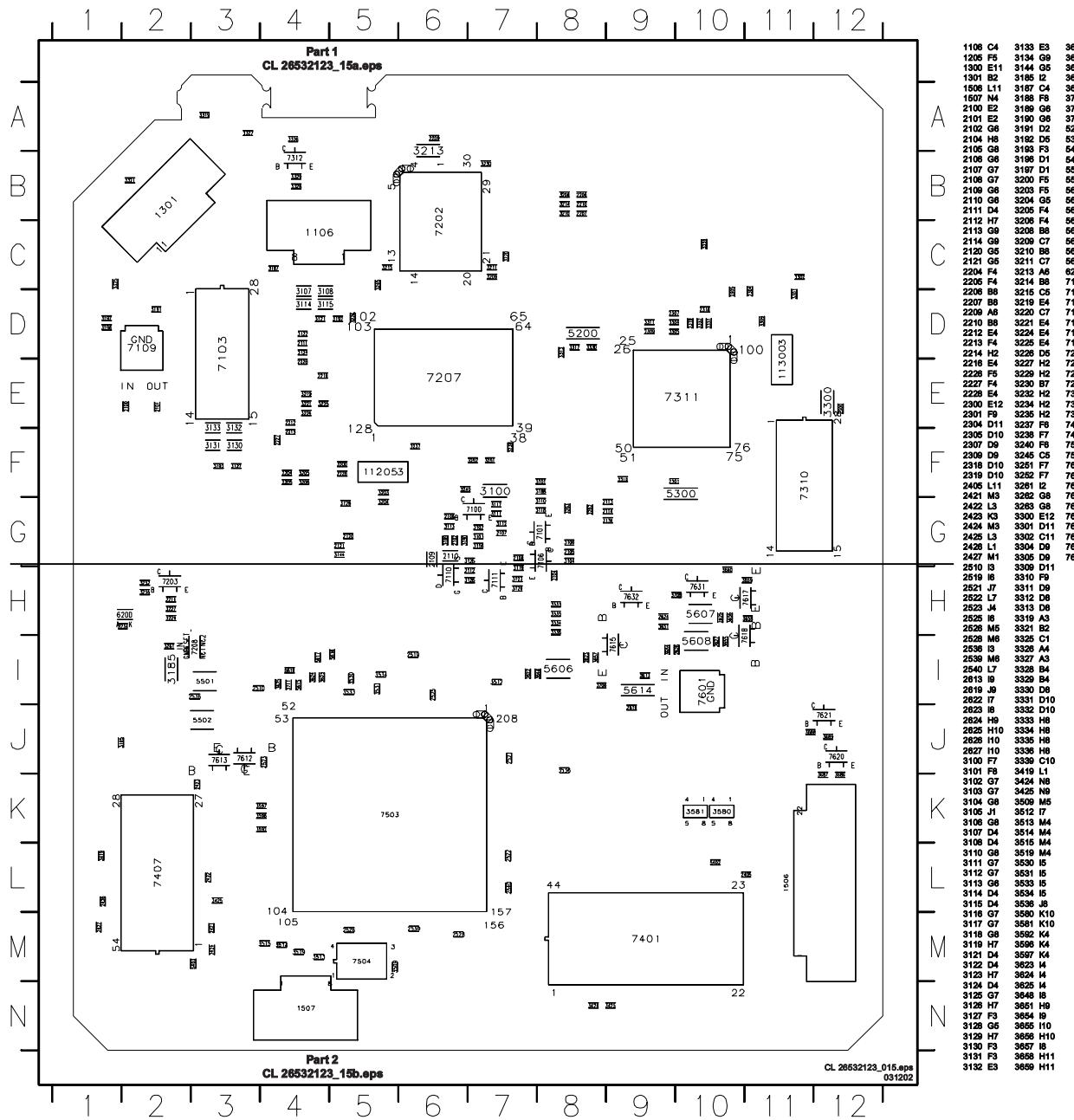
## Layout Monoboard (Part 1 Top Side)

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## **Layout Monoboard (Part 2 Top Side)**

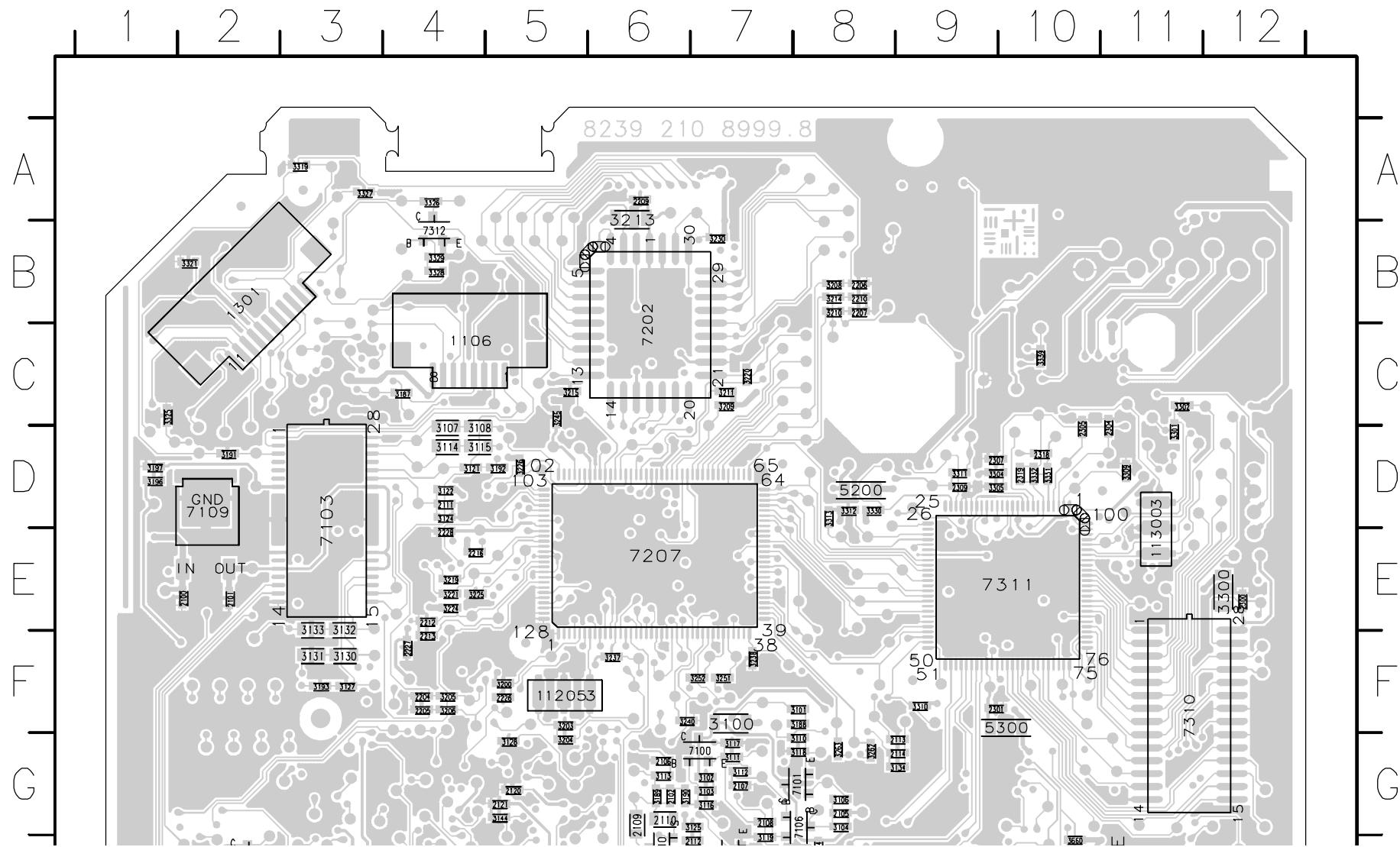


## Layout Monoboard (Overview Bottom Side)



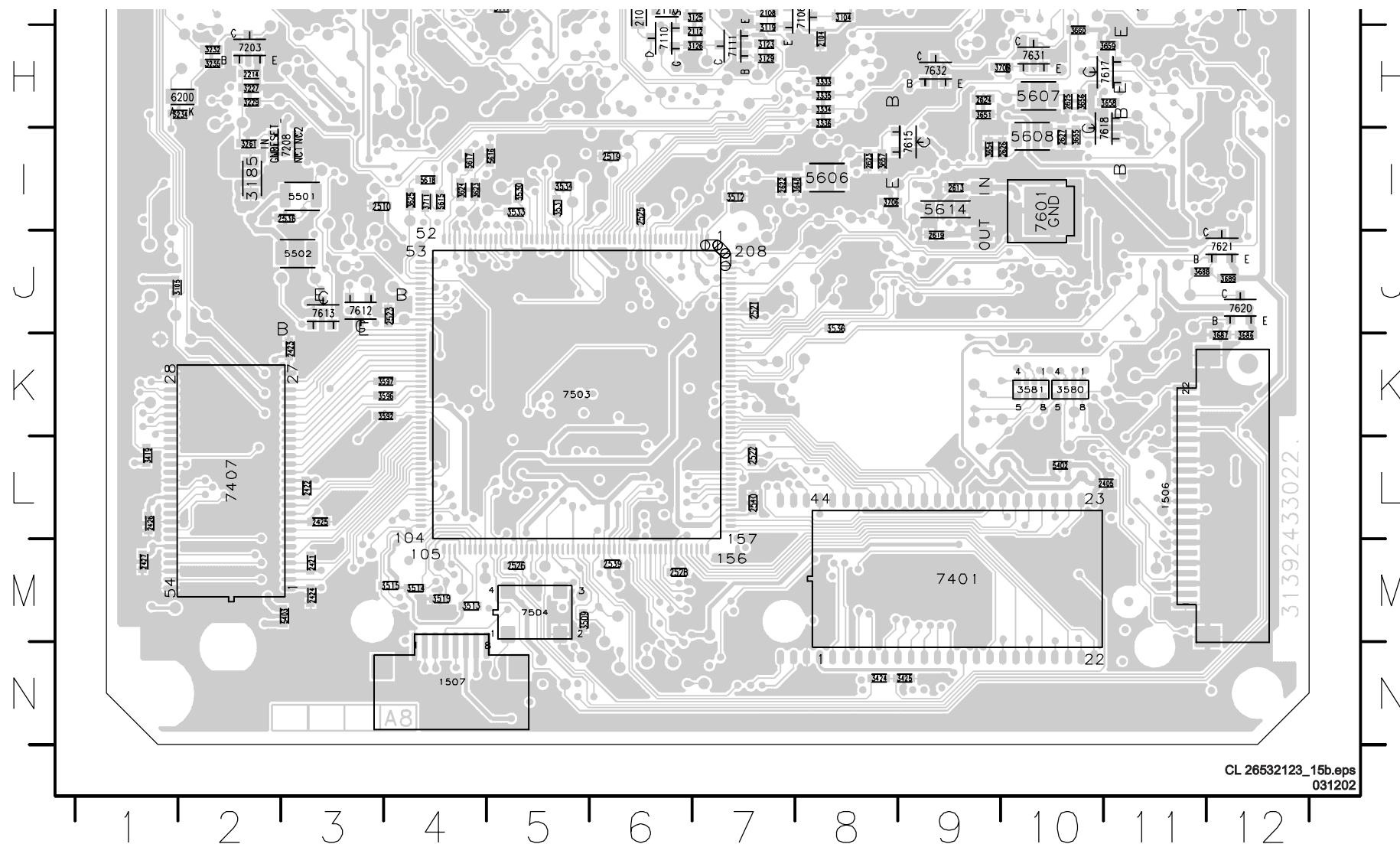
1108 C4	3133 E3	3660 H10
1202 F5	3134 G3	3666 K12
1300 L1	3135 H3	3668 J12
1301 S1	3136 I3	3688 J11
1306 L11	3137 C4	3689 H10
1507 N4	3138 F4	3705 H10
2100 E2	3139 G3	3708 H8
2101 E2	3140 G3	3711 H4
2101 G6	3141 D5	5208 H8
2104 G8	3142 D5	5210 F10
2105 G8	3143 F3	5402 L10
2106 G6	3146 D1	5403 M3
2107 G7	3147 D1	5501 B
2108 G7	3200 F5	5502 J3
2110 F2	3203 F5	5606 B5
2110 F4	3204 F5	5607 H10
2111 D4	3205 F4	5609 H10
2112 H7	3206 F4	5614 H8
2113 G9	3208 B4	5615 H4
2114 G9	3209 C7	5616 H5
2120 G5	3210 B7	5617 H4
2120 G5	3211 C7	5618 H4
2204 F2	3213 B6	6200 H2
2205 F4	3214 B6	7100 G7
2206 B8	3215 C5	7101 G8
2207 B8	3219 E3	7103 D3
2209 A6	3220 C7	7106 H8
2210 B8	3221 E5	7108 D2
2212 E4	3222 E5	7109 H8
2213 F4	3225 E4	7111 H7
2214 H2	3226 D4	7202 C8
2216 E4	3227 H2	7203 H2
2228 F5	3229 H2	7207 E8
2227 F4	3230 B7	7208 B5
2228 E4	3231 H2	7211 H11
2300 F2	3234 H2	7311 E10
2301 F2	3235 H2	7312 B4
2304 D11	3237 F7	7401 M9
2305 D10	3240 F7	7503 K5
2307 D9	3245 C5	7504 M5
2309 D9	3246 C5	7505 H10
2319 D10	3252 F7	7612 G
2319 D10	3252 F7	7613 J3
2405 L11	3261 I2	7813 J3
2421 M3	3262 G8	7815 H9
2422 L3	3263 G8	7817 H11
2423 K3	3300 E12	7818 H11
2424 K3	3301 F12	7820 H12
2425 L3	3302 C11	7821 J12
2426 L1	3304 D9	7831 H10
2427 M1	3305 D9	7832 H9
2510 I3	3309 D11	
2519 I6	3310 F9	
2521 I7	3311 D8	
2521 L7	3312 D8	
2522 J4	3313 D8	
2525 I8	3319 A3	
2526 M5	3321 B2	
2528 M6	3325 C1	
2538 I3	3328 A4	
2539 I3	3329 A3	
2540 L7	3328 B4	
2613 I9	3329 B4	
2619 J9	3330 D8	
2622 I7	3331 D10	
2623 I8	3332 D10	
2624 H6	3333 H8	
2625 H6	3334 H8	
2626 H10	3335 H8	
2627 H10	3336 H8	
3100 F7	3339 C10	
3101 F8	3419 L1	
3102 G7	3424 N8	
3103 G7	3425 N8	
3104 G9	3620 M5	
3105 J1	3612 I7	
3106 G8	3613 M4	
3107 D4	3614 M4	
3108 D4	3615 M4	
3109 D4	3616 M4	
3111 G7	3631 I5	
3112 G7	3631 I5	
3113 G6	3633 I5	
3114 D4	3634 I5	
3115 D4	3636 J8	
3116 G7	3650 K10	
3117 G7	3651 K10	
3118 G8	3652 K4	
3119 H7	3656 K4	
3121 D4	3657 K4	
3122 D4	3623 I4	
3123 H7	3624 I4	
3124 G6	3644 I8	
3125 G7	3645 I8	
3126 H7	3651 H9	
3127 F3	3654 I9	
3128 G6	3665 H10	
3129 H7	3666 H10	
3130 F3	3667 H8	
3131 F3	3668 H11	
3132 E3	3669 H11	

## **Layout Monoboard (Part 1 Bottom Side)**

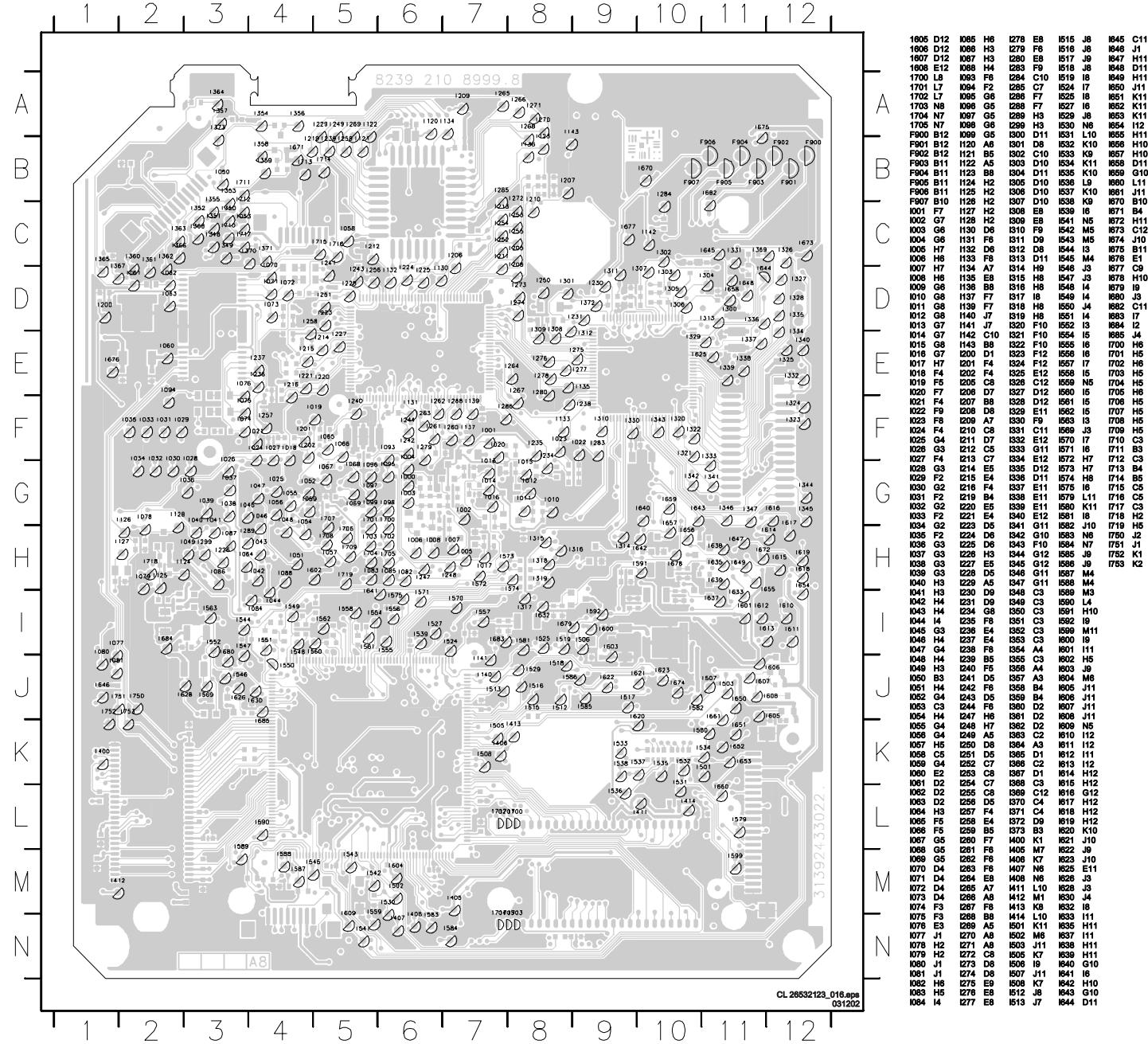


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## **Layout Monoboard (Part 2 Bottom Side)**



## Testpoints Monoboard (Bottom Side)



# 1. Technical specifications

## Specification

### PLAYBACK SYSTEM

DVD-Video  
Video CD & SVCD  
CD (CD-R and CD-RW)  
DVD+RW  
MP3 (DVD622 only)

### OPTICAL READOUT SYSTEM

Lasertype	Semiconductor AlGaAs
Numerical Aperture	0.60 (DVD) 0.45 (VCD/CD)
Wavelength	650 nm (DVD) 780 nm (VCD/CD)

### DVD DISC FORMAT

Medium	Optical Disc
Diameter	12cm (8cm)
Playing time (12cm)	One layer      2.15 h* Dual layer    4 h* Two side       4.30 h* Single layer    8 h* Two side       8 h* Dual layer

### VIDEO FORMAT

DA Converter	10 bits
Signal handling	Components
Digital Compression	MPEG2 for DVD, MPEG1 for VCD

### TV STANDARD

	<b>(PAL/50Hz)</b>	<b>(NTSC/60Hz)</b>
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

### DVD

Horiz. Resolution	720 pixels	720 pixels
Vertical Resolution	576 lines	480 lines

### VCD

Horiz. Resolution	352 pixels	352 pixels
Vertical Resolution	288 lines	240 lines

### VIDEO PERFORMANCE

Video output	1Vpp into 75 ohm
RGB (SCART) output	0.7Vpp into 75 ohm
Black Level Shift	On/Off
Video Shift	Left/Right

### AUDIO FORMAT

Digital	MPEG DTS/Dolby Digital PCM	Compressed Digital 16, 20, 24 bits fs, 44.1, 48, 96 kHz
Analog Sound Stereo		
Dolby Pro Logic downmix from Dolby Digital multi-channel sound		
3D Sound (TruSurround) for virtual 5.1 channel sound on 2 speakers		

### AUDIO PERFORMANCE

DA Converter	24 bits	
DVD	fs 96 kHz fs 48 kHz	4 Hz - 44 kHz 4 Hz - 22 kHz
Video CD	fs 44.1 kHz	4 Hz - 20 kHz
CD	fs 44.1 kHz	100 dB
Signal-Noise (1kHz)		97 dB
Dynamic Range (1kHz)		110 dB
Crosstalk (1kHz)		88 dB
Distortion and Noise (1kHz)		MPEG Audio L3
MPEG MP3		

### CONNECTIONS

SCART	Euroconnector
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Digital Output	1 coaxial IEC958 for CDDA / LPCM IEC1937 for MPEG1/2, Dolby Digital and DTS

### CABINET

Dimensions (w x h x d)	435 x 81 x 295 mm
Weight	Approx. 3.5 Kg

### GENERAL FUNCTIONALITY

- Stop / Play / Pause
- Fast Forward / Backward
- Time Search
- Step Forward / Backward
- Slow Motion
- Title / Chapter / Track Select
- Skip Next / Previous
- Repeat (Chapter / Title / All) or (Track / All)
- A-B Repeat
- Shuffle
- Scan
- New enhanced user graphical interface
- Perfect Still with digital multi-tap filter
- Zoom (x1.33, x2, x4) with picture enhancement
- Smart Picture for convenient personal colour setting (DVD622 only)
- PAL/NTSC Conversion (DVD622 only)
- Screen Saver (Dim 75% after 15 min.)
- 3D Sound (TruSurround)
- Virtual Jog Shuttle
- Audio and video bit rate indicator

### DVD FUNCTIONALITY

- Multi-angle Selection
- Audio Selection (1 out of max. 8 languages)
- Subtitles Selection (1 out of max. 32 languages)
- Aspect Ratio conversion (16:9, 4:3 Letterbox, 4:3 Pan Scan)
- Parental Control and Disk Lock
- Disc Menu support (Title Menu and Root Menu)
- Resume (5 discs) after stop / standby
- Programming Titles/chapters with Favourite Selection

### VIDEO CD FUNCTIONALITY

- Playback Control for VCD 2.0 discs
- Disc Lock
- Resume (5 discs) after stop / standby
- Programming Tracks with Favourite Selection

### AUDIO CD FUNCTIONALITY

- Time Display (Total / Track / Remaining Track Time)
- Full audio functionality with remote control
- Programming with Favourite Track Selection

### MP3 FUNCTIONALITY (DVD622 only)

- Time Display (Track)
- Album and Track Selection
- Repeat (Disc / Album / Track)

\* typical playing time for movie with 2 spoken languages and 3 subtitle languages.

**Specifications subject to change without prior notice**

## 2. Warnings and Laser safety instructions



### WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.



### WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.



### ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.



### WARNUNG

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen Sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.



### AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegati allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.



Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.



Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.



Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden. Für Reparaturen sind Original-Ersatzteile zu verwenden.



Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambi idetici a quelli specificati.



Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

### SHOCK, FIRE HAZARD SERVICE TEST:

**CAUTION:** After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom, Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.  
Ref.UL Standard NO.1492.

### NOTE ON SAFETY:

Symbol **▲** : Fire or electrical shock hazard. Only original parts should be used to replace any part with symbol **▲**. Any other component substitution(other than original type), may increase risk or fire or electrical shock hazard.

## LASER SAFETY

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

### LASER DEVICE UNIT

Type:	SemiconductorlaserGaAlAs
Wave length:	650 nm (DVD) 780 nm (VCD/CD)
Output Power:	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence:	60 degree



**USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURE OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.**

### AVOID DIRECT EXPOSURE TO BEAM

#### WARNING

The use of optical instruments with this product will increase eye hazard.

Repair handling should take place as much as possible with a disc loaded inside the player

#### WARNING LOCATION: INSIDE ON LASER COVERSCHILD

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM  
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING  
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN  
WARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN  
VARO! AVATT AEssa OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEN  
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRÄHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN  
DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM  
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

## Warning for powersupply on position 1005

**The primary side of the powersupply including the heatsink carries live mains voltage when the player is connected to the mains even when the player is swiched off !**

This primary area is not shielded so it is possible to touch copper tracks and/or components when servicing the player. Service personnel have to take precautions to prevent touching this area or components in this area .

The primary side of the powersupply has been indicated with a lightning stroke and a stripe-marked printed on the printed wiring board

## 2.1 Notes

### 2.1.1 DVD-Module

For repair of the DVD-module ASD1, the service manual 3122 785 10840 has to be used.

### 2.1.2 Compair

For assistance with the repair process of the monoboard an electronic Fault finding guidance has been developed , this program is called COMPAIR.

This COMPAIR program is available on CDROM.

The Version of the CDROM for repair of the monoboard is V1.3 and can be ordered with codenumber : 4822 727 21637.

This is an update CDROM , so when the COMPAIR CDROM is used for the first time , one has to install the COMPAIR ENGINE CDROM V1.2 first.

The V1.2 CDROM can be ordered with codenumber 4822 727 634 and has to registered after installation , the procedure for registration is explained in the help file of the program and in the booklet from the CDROM.

The cable to connect the monoboard with a PC can be ordered with codenumber 3122 785 90017.

All the hardware and software requirements of the systems necessary for working with COMPAIR is described on the CDROM.

### 3. Directions for use

#### Important Note



**DVD-622**  
**DVD-612**

<b>DK</b> Advarsel: Laserudstråling ved åbning når sikkerhedsbryderne er ude af funktion. Undgå u tæteleje for stråling. <b>Bemerk:</b> Netabryderen POWER er sekundært indkoblet og abryder ikke strømmen fra netet. Den indbyggede netdel er derfor tilsluttet til lysnettet så hænge næstikket sidder i stikkontakten.	<b>S</b> Klass 1 laserapparat <b>Varming!</b> Om apparaten anvnds på annat sätt än i denna bruksanvisning specificeras, kan användaren utsättas för laserstrålning, som överskrider gränsen för laserklass 1. <b>Observera!</b> Strömbrytaren POWER är sekundärt kopplad och inte bryter strömmen från netet. Den indbyggda nätdelen är därför anslutet till elnätet så länge ströckoppen sitter i vägguttaget.	<b>SF</b> Luokan 1 laserlaitte + Luokka 1 laserapparat <b>Varoitus!</b> Laitteen käyttäminen muulla kuin tässä käytöohjeessa mainitulla tavalla saattaa aiheuttaa käräjän turvallisuusteknisen 1 ylittävälle lasersäleille.	<b>N</b> Observer: Netbryteren POWER er sekundært inntokplet. Den innebefintede er derfor ikke frakoplet nettet så lenge apparatet er tilsluttet nettkontakten.  <b>Huom.</b> Toiminnanlisain POWER on lykddyettä tosiopiolle, elikä se sytyke läitetä irri sähköverosta. Säännökseen mukaan verkkoko-oa on kytketty sähköverkkoon aina silloin, kun pistoke on piistorasiaa.
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#### Important Note for Users in the UK

##### Mains plug

This apparatus is fitted with an approved 13 Amp plug. To change a fuse in this type of plug proceed as follows:

- 1 Remove fuse cover and fuse.
- 2 Fit new fuse which should be a BS1362 5 Amp, A.S.T.A. or BSI approved type.
- 3 Refit the fuse cover.

##### Mains plug

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place. If the mains plug contains a fuse, this should have a value of 5 Amp. If a plug without a fuse is used the fuse at the distribution board should not be greater than 5 Amp.

Note: The severed plug must be disposed of to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.

##### How to connect a plug

The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live (L). As these colours may not correspond with the colour markings identifying the terminals in your plug proceed as follows:

- Connect the blue wire to the terminal marked N or coloured black.
  - Connect the brown wire to the terminal marked L or coloured red.
  - Do not connect either wire to the earth terminal in the plug, marked E (or e) or coloured green (or green and yellow).
- Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the two wires.

**Copyright in the U.K.**  
**Recording and playback of material may require**  
**consent. See Copyright Act 1956 and The Performer's**  
**Protection Act 1958 to 1972.**

**PHILIPS**



*Let's make things better*



## General Information

The region code for this set is 2.



Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes and discs can have an optional region code. If you load a disc of a different region code to your player, you will see the region code notice on the screen. The disc will not playback and should be unloaded.

**NOTE:**  
PICTURES SHOWN MAYBE DIFFERENT  
BETWEEN COUNTRIES.

**NEVER MAKE OR CHANGE CONNECTIONS  
WITH THE POWER SWITCHED ON.**

**CAUTION  
(WARNING LOCATION:ON THE BACKPLATE  
OF SET)**

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**C E** The DVD-VIDEO player is in conformity with the EMC directive and low-voltage directive.

TruSurround and the SRS symbol are trademarks of SRS Labs, Inc. TruSurround technology is manufactured under license from SRS Labs, Inc.

**TruSurround™  
by SRS (●)**

For Customer Use:

Read carefully the information located at the bottom of your DVD-VIDEO player and enter below the Serial No. Retain this information for future reference.  
Model No. DVD-VIDEO  
Serial No. \_\_\_\_\_

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## Introduction

### Philips DVD-Video Introduction

Your Philips DVD-Video player will playback digital video discs conforming to the universal DVD-Video standard. With it, you will be able to enjoy full-length movies with true cinema picture quality, as well as stereo or multi-channel sound (depending on the disc and your playback setup). The unique features of DVD-Video, such as selection of sound track, subtitle languages and different camera angles (disc dependent), are all supported.

In addition to DVD-Video discs, you will be able to playback all Video CDs, SVCDs and Audio CDs (including finalised CD Recordable and CD Rewritable).



You will recognise DVD-Video discs by the logo shown. Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more titles.



### Video CD

You will recognise Video CDs by the logo shown. Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more titles.



### SuperVCD (SVCD)

SVCD discs based on the SuperVCD IO Standard referring to Standard of Electronics Industry of the People's Republic of China.

### Audio CD

Audio CDs contain music tracks only. You will recognise Audio CDs by their logo shown.



### MP3 (MPEG Audio Layer-3) (D/D622 only)

This player supports MP3 which contains compressed music tracks.

### Note:

- Only the first session of multisession discs is supported

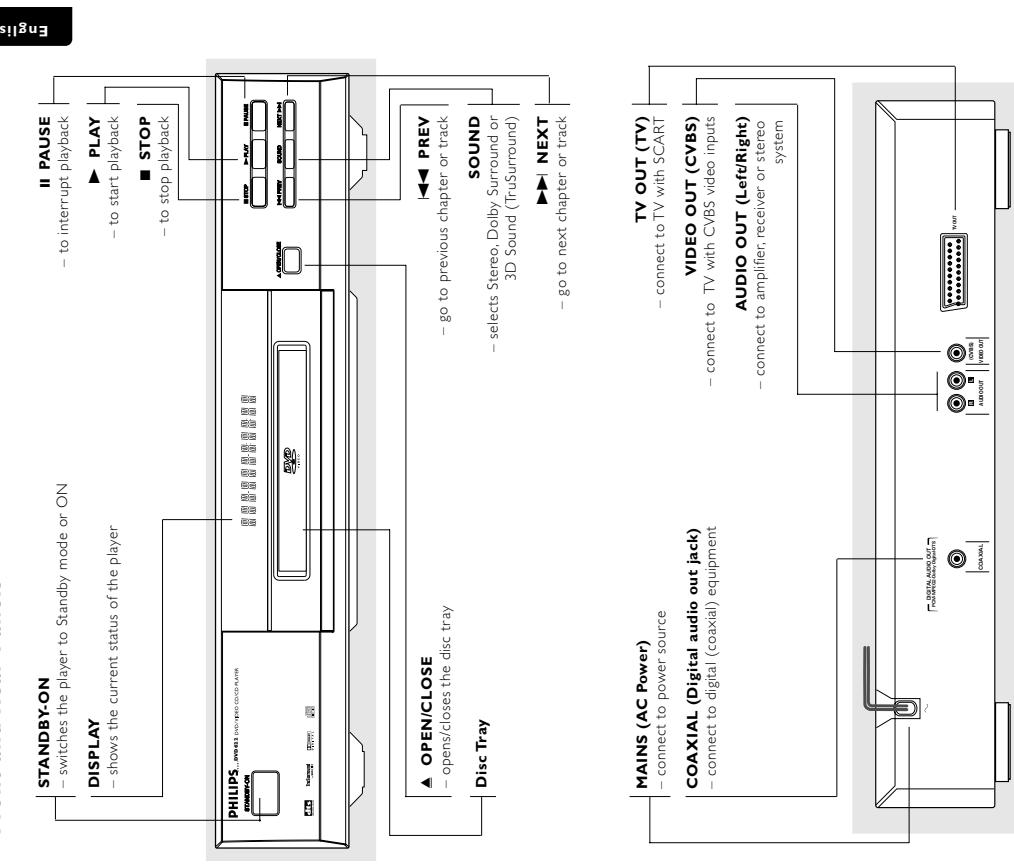
## Unpacking

First check and identify the contents of your DVD-Video player package. You should have the following items.

- DVD-Video player
- Remote Control with batteries
- Audio cable
- SCART cable
- Instructions for use

## Functional Overview

### Front and Rear Panels



**Caution:** Do not touch the inner pins of the jacks on the rear panel connectors. Electrostatic discharge may cause permanent damage to the unit.

## INTRODUCTION

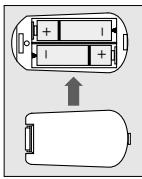
## FUNCTIONAL OVERVIEW

If any item is damaged or missing, contact your retailer or Philips. Keep the packaging materials for future transportation.

### Remote Control Battery Installation

Insert batteries as indicated inside the battery compartment.

**Caution:** Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.)



## Safety Information

- Do not expose the system to excessive moisture, rain, sand or heat sources. Place the player on a firm, flat surface. Keep the player away from domestic heating equipment and direct sunlight.
- In a cabinet allow about 2.5 cm (1 inch) of free space all around the player for adequate ventilation.
- If the DVD-Video player cannot read CDs/DVDs correctly use a commonly available cleaning CD/DVD to clean the lens before taking the DVD-Video player to be repaired. Other cleaning methods may destroy the lens. Always keep the tray closed to avoid dust on the lens.
- The lens may cloud over when the DVD-Video player is suddenly moved from cold to warm surroundings. Playing a CD/DVD is not possible then. Leave the power on for about one hour with no disc in the unit until normal playback is possible.

## Cleaning Discs

- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the centre out in a straight line.
- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog discs.



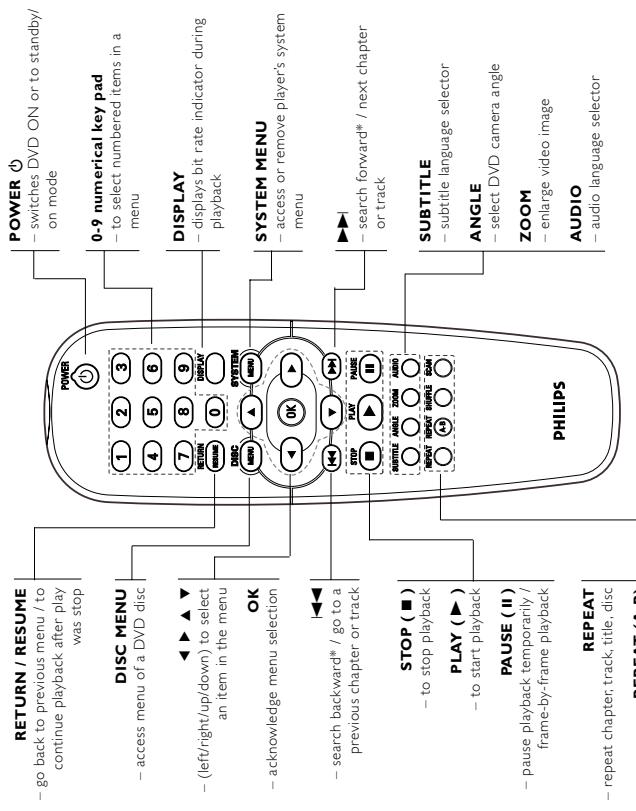
## Preparation

### Remote Control

English

### General Notes

- Depending on your TV and other equipment you wish to connect, there are various ways you could connect the player. Use only one of the connections described below. Please refer to the manuals of your TV/VCR/Stereo System or other devices as necessary to make the best connections.
- For better sound reproduction, connect the player's audio out jacks to your amplifier/receiver, stereo or A/V equipment. See 'Connecting to optional equipment'.
- Caution:**
  - Do not connect the player's audio out jack to the phone in lack of your audio system.
  - Do not connect your DVD-player via your VCR. The DVD image could be distorted by the copy protection system.



### Connecting to Optional Equipment

#### Connecting to an amplifier equipped with two channel analog stereo or Dolby Surround

- Connect the audio Left and Right out jacks of the DVD player to the audio left and right in/jack on your amplifier, receiver or stereo system, using an audio cable (A).

#### Connecting to an amplifier equipped with two channel digital stereo (PCM) or to an A/V receiver equipped with a multi-channel decoder (Dolby Digital™, MPEG 2 and DTS)

- Connect the digital audio out jack (coaxial F) to the corresponding in/jack on your amplifier. Use an optional digital (coaxial F) audio cable.
- You will need to activate the player's digital output (see Personal Preferences).

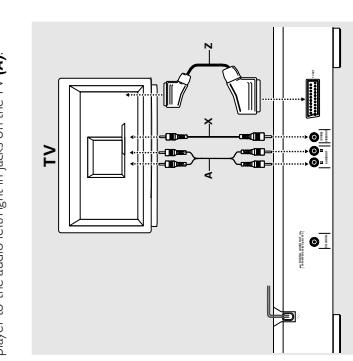
### Connecting to a TV

- Connect the SCART to the corresponding connector on the TV using the SCART cable supplied (Z).

If your TV is not equipped with a SCART, you can select one of the following alternative connections:

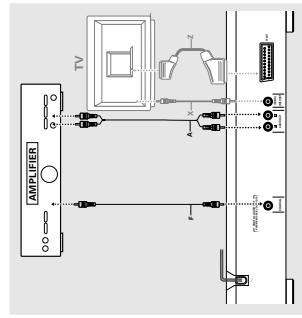
#### Video CVBS connection

- Connect the Video out (CVBS) jack to the video in/jack on the TV using an optional video cable (X).
- Connect the Left and Right audio out jacks of the DVD player to the audio left/right in/jacks on the TV (A).



#### Digital Multi-channel sound

Digital multi-channel connection provides the best sound quality. For this you need a multi-channel A/V receiver that supports one or more of the audio formats supported by your DVD player (MPEG 2, Dolby Digital™ and DTS). Check the receiver manual and the logos on the front of the receiver.



\* Press key for about 2 seconds

English

**General Explanation****About this manual**

This manual gives the basic instructions for operating the DVD Player. Some DVDs require specific operation or allow only limited operation during playback, which may not respond to all operating commands. When this occurs, the symbol  appears on the TV screen, indicating that the operation is not permitted by the player or the disc.

**Remote control operation**

- Unless stated all operations can be carried out with the remote control. Always point the remote control directly at the player, making sure there are no obstructions in the path of the infrared beam.
- Corresponding keys on the front panel of the player can also be used.

**NTSC/PAL Settings**

You can switch the NTSC/PAL setting of the DVD player to match the video signal of your TV. This setting only affects the television's on-screen display, that shows the stop and setup modes. You may select either NTSC or PAL. To change the DVD player setting to PAL or NTSC, follow the steps below.

**1** Unplug the DVD player from the mains.

**2** Press and hold **■** and **▶** on the front of the DVD player. While holding **■** and **▶**, plug in the mains.

**3** After PAL or NTSC appears on the display panel of the DVD player, release **■** and **▶**. At the same time, the PAL or NTSC that appears on the display panel indicates the current setting.

**4** To change the setting, press **▶**, within three seconds. The new setting (PAL or NTSC) will appear on the display panel.

**Initial Setup (Virgin Mode)****General**

In 'Initial Setup' you may have to set your preferences for some of the player's features. (not applicable for all models)

**Operation**

After switching on the player for the very first time, the 'Initial Setup Screen' will appear.  
The menu for the first item to be set is displayed and the first option is highlighted.

- Use the **▼** keys to go through the options in the menu.
- The icon of the selected option will be highlighted.
- Use OK to confirm your selection and to go to the next menu.

**Note:**

menus will appear on the screen.

- The 'Initial Setup' screen will only disappear after the settings for the last item have been confirmed.
- If any keys other than **▼** or OK are pressed,  will appear on the screen.
- If the player is switched off while setting personal preferences, all preferences have to be set again after switching the player on again.

**The following items may have to be set in Initial Setup:****Menu language**

You can choose from different languages. The On Screen Menus will be displayed in the language available on the player:

**Audio language**

You can choose from different languages. If available on the disc, the player will play the audio in the selected language. If the selected language is not available, speech will revert to the first spoken language on the disc.

**Subtitle language**

You can choose from different subtitle languages. If available on the disc, subtitles will be in the language chosen. If the selected language is not available, subtitles will revert to the first subtitle language on the disc.

**TV Shape**

If you have a wide screen (16:9) TV, select 16:9.

If you have a regular (4:3) TV, select 4:3.

If you have a 4:3 TV you can also select between Letterbox for a wide-screen, picture with black bars top and bottom; or Pan Scan, for a full-height picture with the sides trimmed. If a disc supports the format, the picture will be shown accordingly.

**Country**

Select your country. This is used as input for the 'Parental Control' feature (see Access Control).

**Note:**

- All these items may have to be set during 'Initial Setup'. After that, they can always be changed in the Personal Preferences Menu.

**Menu Bar/Status Window**

As there are multiple menu-bars, the items on the menu-bar are arranged according to usage, availability of direct access keys. Pressing the OSD keys once will toggle through menu-bar-1,menu-bar-2, menu-bar-3 and Off.

**Note:**

- Personal Preferences
- Subtitle Language
- Audio Language
- Color
- Sound

**Menu-bar 1**

**Menu-bar 2**

**Step**

**Slow motion**

**Fast motion**

**Angle**

**Zoom**

**Menu-bar 3**

**Title**

**Chapter**

**Time Search**

**Favourite Track Selection (FTS)**

- In the Preference Menu, select **TV System**.
  - Press **▲** or **▼** to select PAL/NTSC or AUTO.
- Notes:**
- AUTO mode can only be selected when using a multi-system TV.
  - This is applicable for CVBS output on cinch and SCART only

English

## Temporary Feedback Field Icons

English

### Language

Select the required Menu, Audio and Subtitle language. See 'Initial Setup'.  
Audio language and Subtitle language can also be adapted via the Menu bar on the screen.

### Sound

#### - Digital output

Factory setting: ALL. This means coaxial output is on. If you are not connecting equipment with a digital input, change the setting to Off.  
If your equipment doesn't include a digital output to PCM (Pulse Code Modulation), set the digital output to PCM (Pulse Code Modulation).



#### - Video shift

The factory centres the video on your screen. Use this setting to personalize the position of the picture on your TV by scrolling it to the left or right.



**Colour settings (DVD/22 only)**  
You can select one of five predefined sets of colour settings and one set (Personal) which you can define yourself.



**Personal Preferences**  
You can set your own personal preferences on the player.

**General operation:**

- Press SYSTEM MENU on the remote control.
- Select in the menu bar;
- The Personal Preferences menu appears.
- Use the keys to toggle through the menus, submenus and submenu options.
- When a menu item is selected, the cursor keys (on the remote control) to operate the item are displayed next to the item.
- Press OK to confirm and return to the main menu.
- The following items can be adapted:

**Personal colour (DVD/22 only)**  
Allows you to fine-tune the selected colour settings saturation, brightness and contrast.

### Picture

#### - TV Shape

See 'Initial Setup'.

#### - Black level shift (NTSC only)

Select ON for adapting the colour dynamics to obtain richer contrasts.



#### - Analog output

Select Stereo, Dolby Surround or 3D sound (TrSurround) to match your system's playback capability.



#### - Night Mode

Optimizes the dynamics of the sound for low volume playback.

#### - Karaoke vocal

Put this setting to ON only when a multi-channel karaoke DVD is being played. The karaoke channels on the disc will then be mixed into a normal stereo sound.

### Language

Select the required Menu, Audio and Subtitle language. See 'Initial Setup'.  
Audio language and Subtitle language can also be adapted via the Menu bar on the screen.

### Features

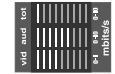
#### - Access Control

Access Control contains the following features:  
Child Lock - When Child Lock is set to ON, a 4-digit code needs to be entered in order to play back discs.  
Parental control - Allows the conditional presentation of DVDs containing Parental Control information (see 'Access Control').



#### - Status Window

Displays the current status of the player and is displayed with the menu bar. When disc playback is stopped, it is displayed with the 'Temporary Feedback Field' in the default screen. See 'On-Screen Display' information.  
Factory setting is ON. Select OFF to suppress display of the Status Window.



#### - Bit Rate Indicator

When activated the bit rate for video audio as well as total bit rate is displayed. This is only applicable during playback of DVD and SVCD discs.

#### - Help text

When set to ON, help text describes the icons selected. Select OFF if you no longer require the help text.

## English

**Time search**

The Time Search function allows you to start playing at any chosen time on the disc.

- Select (FAST MOTION) in the menu bar.
- Press to enter the FAST MOTION menu.
- Use the keys to select the required speed:-32,-8 or -4 (backward), or +4,+8,+32 (forward).
- Select 1 to play the disc at normal speed again.
- To exit FAST MOTION mode, press or .
- To search forward or backward through different speeds, you can also hold down or .

**Repeat****DVD-Video Discs - Repeat chapter/title/disc**

- To repeat the currently playing chapter:
- press REPEAT.
- REPEAT CHPT appears on the player display.
- To repeat the title currently playing ,press REPEAT a second time

- REPEAT TITL appears on the display.
- To repeat the entire disc, press REPEAT a third time
- REPEAT appears on the display.
- To Exit Repeat mode, press REPEAT a fourth time.

- REPEAT track/disc
- To repeat the track currently playing, press REPEAT.
- REPEAT TRK appears on the player display.
- To repeat the entire disc, press REPEAT a second time.
- REPEAT appears on display and screen.
- To Exit Repeat mode, press REPEAT a third time.

- REPEAT A-B
- To repeat a sequence in a title:
- Press REPEAT A-B at your chosen starting point.
- A-B appears briefly on the screen.
- To EXIT ZOOM mode:

- ZOOM
- Press to activate the ZOOM function and select the required zoom factor: (3x or 2 or 4).
- Use the / keys to pan across the screen.
- When OK is pressed only the zoomed picture will be shown on the screen.
- ZOOM
- To EXIT ZOOM mode:

- STILL
- To stop playback, press .
- The default screen will appear giving information about the current status.
- You can resume playback from the point at which you stopped playback. Press when you see the Resume icon on the screen, press again.
- The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc and press on the remote control or press when you see the Resume icon on the screen, then press again.

- SCAN
- Scanning plays the first 10 seconds of each chapter/index on the disc.
- Press SCAN.
- To continue playback at your chosen track, press again or press .

- SHUFFLE
- This shuffles the playing order of chapters within a title, if the title has more than one chapter.
- SHUFFLE appears on the screen for about 2 seconds.
- To return to normal playback, press SHUFFLE again.

- VIDEO CD
- Press SHUFFLE during playback.
- SHUFFLE appears on the screen for about 2 seconds.
- To return to normal playback, press SHUFFLE again.

**Operation****Loading Discs**

- Press OPEN/CLOSE on the front of the player to open disc tray.
- Load your chosen disc in the tray label side up.
- Press OPEN/CLOSE again, to close the tray.  
→ REFLD appears in the status window and on the player display, and playback starts automatically.

- Note:**
- Unless stated, all operations described are based on remote control operation. A number of operations can also be carried out via the menu bar on the screen.
- Moving to another title/chapter**
- When a disc has more than one title or chapter, you can move to another title/chapter as follows:
- Select SYSTEM MENU, then select or in the menu bar.
  - Press or to select a title/chapter.
  - If the number has more than one digit, press the keys in rapid succession.

**Playing a DVD-video and Video CD disc**

- 
- After inserting the disc and closing the tray, playback starts automatically and the status window of the player display shows the type of disc loaded, as well as disc's information and playing time.
  - The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key if not, use the , keys to highlight your selection, then press .
  - The currently playing title and chapter number are displayed.
  - Playback may stop at the end of the title, and then may return to the DVD menu. To go on to the next title, press .
  - To stop playback, press .
  - The default screen will appear giving information about the current status.
  - You can resume playback from the point at which you stopped playback. Press when you see the Resume icon on the screen, press again.
  - The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc and press on the remote control or press when you see the Resume icon on the screen, then press again.

**Note:**

- DVDs may have a region code. Your player will not play discs that have a region code different from the region code of your player.

**General features**

- Note:**
- Unless stated, all operations described are based on remote control operation. A number of operations can also be carried out via the menu bar on the screen.

- Moving to another title/chapter**
- When a disc has more than one title or chapter, you can move to another title/chapter as follows:
- Select SYSTEM MENU, then select or in the menu bar.
  - Press or to select a title/chapter.
  - If the number has more than one digit, press the keys in rapid succession.

**Slow Motion**

- 
- Select (SLOW MOTION) in the menu bar.
  - Use the keys to enter the SLOW MOTION menu.
  - The player will now go into PAUSE mode.
  - Use the cursor keys to select the required speed:-1,-12,-14, or -18 (backward), or +1/8,+1/4,+1/2, or +1 (forward).
  - If II is pressed the speed will be set to zero (PAUSE).
  - To exit slow motion mode, press and .

**Still Picture and Frame-by-frame playback**

- 
- Select (STEP) in the menu bar.
  - Use the key to enter the picture by picture menu.
  - The player will now go into PAUSE mode.
  - Use the cursor keys to select the previous or next picture frame.
  - To EXIT STEP mode, press or .
  - You can also Step forward by pressing repeatedly on the remote control.

**Scan**

- 
- Scanning plays the first 10 seconds of each chapter/index on the disc.
  - Press SCAN.
  - To continue playback at your chosen track, press again or press .

**Note:**

- DVDs may have a region code. Your player will not play discs that have a region code different from the region code of your player.

English

**Special DVD features**

**FTS-Video**  
The FTS-Video function allows you to store your favourite titles and chapters (DVD) and favourite tracks and indexes (VCD) for a particular disc in the player memory.

- An programmed FTS will be placed on top of the list when playback is activated. When the list is full a new programme will replace the last programme on the list.
- The programme can be selected and played at any time.

**Storing a FTS-Video Programme**

- In STOP mode, select **VIDEO FTS**  in the menu bar.
- Press **▼** to open the menu.
- The **VIDEO FTS** menu appears.
- Press **▶** or **◀** or FTS to select ON or OFF.

**Storing titles/tracks**

- Press **▼** to select **TITLES**.
- Use **▶** and **◀** to select the required title.
- Press OK if you wish to store the entire title.
- The title number will be added to the list of selections.

**Storing chapters/indexes**

- Press **▼** on the selected title number.
- The title number will be marked and the highlight moves to the first available chapter number for this title.
- Use **▶** and **◀** to select the required chapter number.
- Press OK to confirm the selection.
- The title/chapter selection will be added to the list of selections.

**Erasing a FTS-Video Programme**

- In STOP mode, select **VIDEO FTS**  in the menu bar.
- Use **▼** to select **PROGRAM**.
- Use **▶** and **◀** to select the required selection number.
- Press OK to erase the selection.
- Press SYSTEM MENU to exit.

**If you wish to erase all selections:**

- In STOP mode, select **VIDEO FTS**  in the menu bar.
- Use **▼** to select **CLEAR ALL**.
- Press OK.
- All selections will now be erased.
- Press SYSTEM MENU to exit.

**Special VCD & SVCD features**

**Checking the contents of DVD-Video discs: Menus**  
DVDs may contain menus to navigate the disc and access special features. To use the menu, press the appropriate numerical key or use the **▼**, **▶**, **◀**, **▶** keys to highlight your selection, then press OK.

**Title/Disc menu**  
Press **DISC MENU**.

- If the current title has a menu, the menu will appear on the screen otherwise, the disc menu will be displayed.
- The menu can list camera angles, spoken language and subtitle options, and chapters for the title.
- To remove the title menu, press **DISC MENU** again.

**Camera Angle**

If the disc contains sequences recorded from different camera angles, the angle icon appears showing the number of available angles and the angle being shown currently. You can then change the camera angle if you wish.

- Use the **▲** keys to select the required angle icon.
- After a while playback changes to the selected angle. The angle icon remains displayed until multiple angles are no longer available.

**Changing the audio language**

Select **1 (AUDIO)** in the menu bar.  
Press **◀** or **▶** repeatedly to see the different languages.

**Subtitles**

Select **2 (SUBTITLE)** in the menu bar.  
Press **◀** or **▶** repeatedly to see the different subtitles.

**Moving to another track**

Press **◀** or **▶** briefly during playback to go to the next or to return to the beginning of the current track.

Press **◀** twice briefly to step back to the previous track.

To go directly to any track enter the track number using the numerical keys (0-9).

**Shuffle**

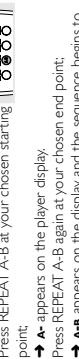
Press **SHUFFLE** during playback.

→ The order of the tracks is changed.

**Repeat track/disc**

Press **SHUFFLE** during playback.

→ To return to normal playback, press **SHUFFLE** again.

**Repeat A-B**

To repeat a sequence on the display.

→ **REPEAT A-B** appears on the display.

Press **REPEAT A-B** at your chosen starting point.

**Scan**

To repeat playback at your chosen end point.

→ **A** appears on the player display.

Press **REPEAT A-B** again at your chosen end point.

**Playing an audio CD**

After loading the disc, playback starts automatically.

- If the TV is on, the Audio CD screen appears.
- The number of tracks and the total playing time will be shown on the screen.
- During playback, the current track number and its elapsed playing time will be shown on the screen and on the player display.
- Playback will stop at the end of the disc.
- To stop playback at any other time, press ■.

		Radio/Unit/Unit		
play	track	time	totaltracks	totaltime
its	11	2:34	14	53:25
track	1 2 3 4 5 6 7 8 9 >			
program	[ ]			
	Clear all			

**Pause**

Press ■ during playback.

→ To return to playback, press ▶.

**Search**

- To search forward or backward through the disc four times normal speed, hold down **◀** or **▶** for about one second during playback.
- Search begins and sound is partially muted.
- To step up to eight times the normal speed, press **◀** or **▶** again.
- Search goes to eight times the speed, and the sound is muted.
- To return to four times the normal speed, press **◀** or **▶** again.
- If the TV is on, search speed and direction are indicated on the screen each time **◀** or **▶** is pressed.
- To end the search, press ▶ to resume playback or ■ to stop.



## Before Requesting Service

### Activating/Deactivating Parental Control

- When disc playback is stopped, select **ACCESS**
- CONTROL** in the features menu using the **▲▼** keys.
- Enter your 4-digit code. If necessary, enter the code a second time.
- Move to **Parental Control** using the **▼** key.
- Press the **►** key.
- Move to **VALUE ADJUSTMENT** (1-8) using the **►** key.
- Then use the **▲▼** keys or the numerical keys on the remote control to select a rating from 1 to 8 for the disc inserted.
- Press **►** to confirm, then press **►** again to exit the menu.

*Rating 0 displayed as '—':*

Parental Control is not activated. The Disc will be played in full.

**Ratings 1 to 8:**

The disc contains scenes not suitable for children. If you set a rating for the player all scenes with the same rating or lower will be played. Higher rated scenes will not be played unless an alternative is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, playback will stop and the 4-digit code has to be entered.

6 Press **OK** or **►** to confirm, then press **►** again to exit the menu.



### Country

- When disc playback is stopped, select **ACCESS**
- CONTROL** in the features menu using the **▲▼** keys.
- Enter the 4-digit code.
- Move to **CHANGE COUNTRY** using the **►** key.
- Press the **►** key.
- Select a country using **▲▼**.
- Press **OK** or **►** to confirm, then press **►** again to exit the menu.

### Changing the 4-digit code

- When disc playback is stopped, select **ACCESS**
- CONTROL** in the features menu using the **▲▼** keys.
- Enter your 4-digit code.
- Move to **CHANGE CODE** using the **▼** key.
- Press the **►** key.
- Enter the new 4-digit code.
- Enter the code a second time and reconfirm by pressing **OK**.
- Press **►** to exit the menu.

*If you forget your 4 digit code*

1 Press **■** to exit 'Child Protect' screen.

2 Select **ACCESS CONTROL** in the features menu using the **▲▼** keys.

3 The 4-digit code can be cancelled by pressing **■** four times in the 'Access Control' dialog.

4 You can then enter a new code (twice) as described above (Changing the 4-digit code).

### Parental Control Disclaimer

This DVD player features the **PARENTAL CONTROL** system which is intended to activate when playing DVD discs furnished with certain software coding. This is according to technical standards adopted by the set maker.

Please note that the **PARENTAL CONTROL** system will not operate a DVD disc which is not furnished with the appropriate software coding. Also note that at the time of release of this DVD player certain aspects of the technical standards had not been settled between set makers and the disc industries.

On this basis Philips cannot guarantee the functioning of **PARENTAL CONTROL** system and denies any liability associated with unintended watching of disc content. If in doubt, please make sure the disc plays according to your **PARENTAL CONTROL** settings before you allow children access to the player.

If it appears that the DVD-Video player is faulty, first consult this checklist. It may be that something has been overlooked. Under no circumstances attempt to repair the system yourself; this will invalidate the warranty.

Look for the specific symptom(s). Then perform only the actions listed to remedy the specific symptom(s).

**English**

### Symptom

### Remedy

#### No power

#### No picture

#### Distorted picture

#### Completely distorted picture or no colour with player menu.

#### Distorted or Black/White picture with DVD or Video CD.

#### No sound

#### Distorted sound from HiFi amplifier.

#### No audio at digital output.

#### No return to start-up screen when disc is removed.

#### The player does not respond to the remote control.

#### Buttons do not work.

#### Player does not respond to some operating commands during playback.

#### DVD-Video player cannot read CDs/DVDs

— Make sure the mains cord (AC Power) is properly connected.

— Check if there is power at the AC outlet by plugging in another appliance.

Look for the specific symptom(s). Then perform only the actions listed to remedy the specific symptom(s).

#### Rating 0 displayed as '—':

— Check if the TV is switched on.

— Check the video connection.

— Check the disc for fingerprints and clean the disc with a soft cloth, wiping from the centre to the edge in a straight line.

— Sometimes a small amount of picture distortion may appear. This is not a malfunction.

— If your TV video signal is NTSC, select the NTSC setting at the DVD player.

— If your video signal is PAL, select the PAL setting see NTSC/PAL SETTINGS.

— If the picture is distorted completely or if the picture rolls vertically, make sure the NTSC/PAL setting at the DVD player matches the video signal of your television.

— If your TV video signal is NTSC, select the NTSC setting at the DVD player.

— If your video signal is PAL, select the PAL setting see NTSC/PAL SETTINGS.

— Check to make sure that no audio connections are made to the amplifier phone input.

— The disc format does not match your TV's video signal (PAL/NTSC - see NTSC/PAL Conversion).

— Check audio connections.

— If you are using a HiFi amplifier, try another sound source.

— Check to make sure that no audio connections are made to the amplifier phone input.

— Check the digital connections.

— Check the settings menu to make sure the digital output is set to ALL or PCM.

— Check if the audio format of the selected audio language matches your receiver capabilities.

— Not applicable for MP3

— Check the digital connections.

— Check the settings menu to make sure the digital output is set to ALL or PCM.

— Check if the audio format of the selected audio language matches your receiver capabilities.

— Not applicable for MP3

— Ensure the disc label is facing up.

— Clean the disc.

— Check if the disc is defective, badly scratched or warped (not flat).

— Check to see if the programme requires another disc to be loaded.

— Air the remote control directly at the sensor on the front of the player.

— Remove any obstacles between the player and the remote control.

— Inspect or replace the batteries in the remote control.

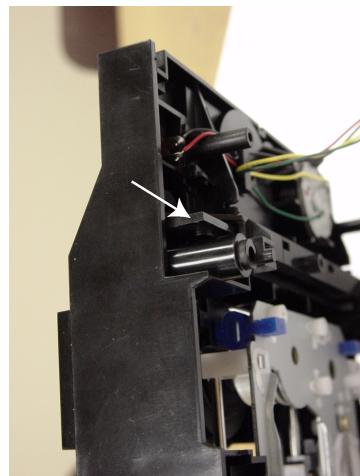
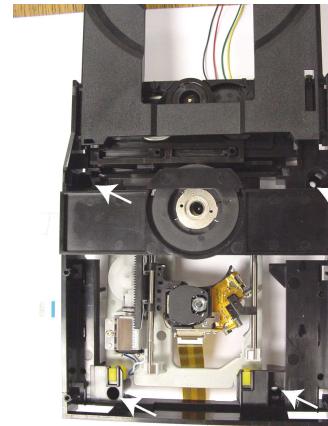
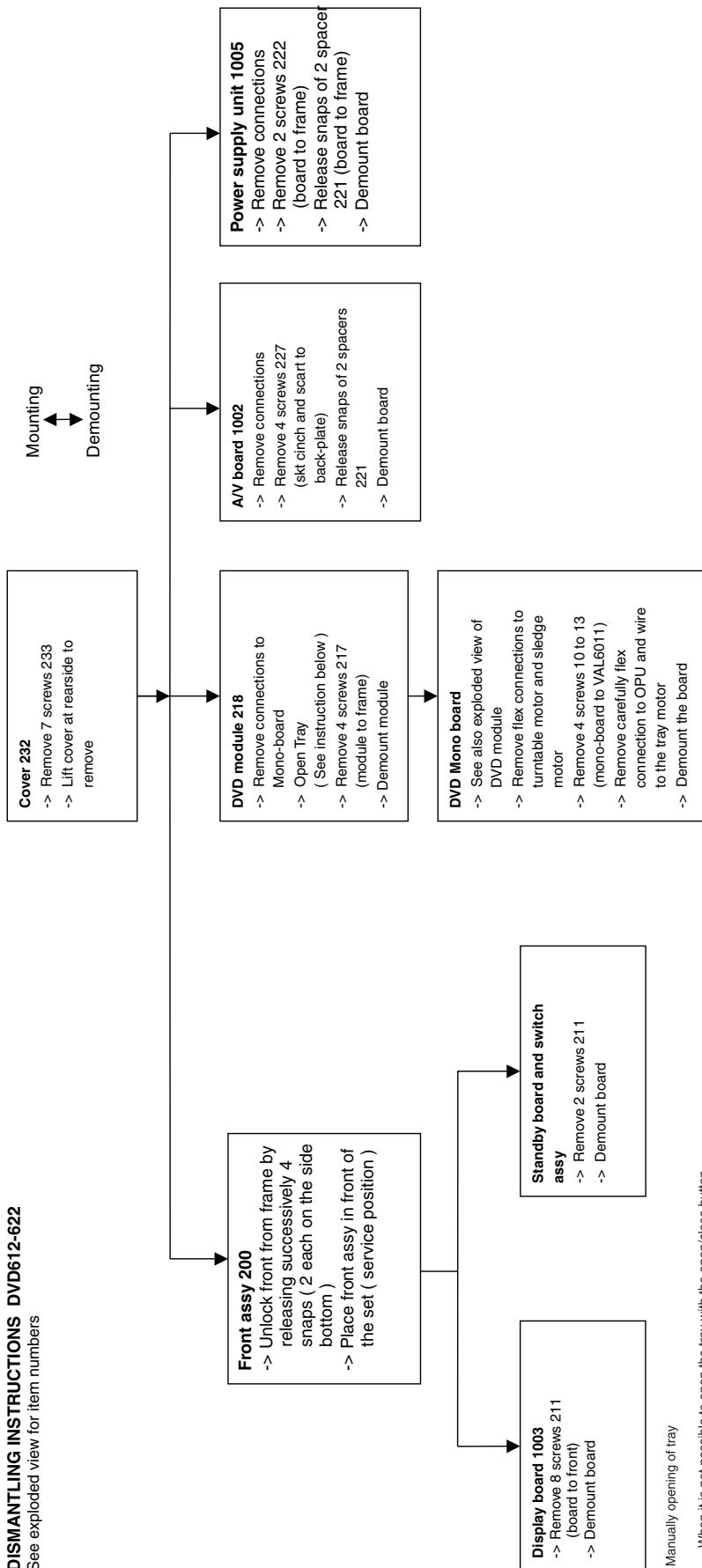
— In order to completely reset the player, unplug the AC cord from the AC outlet. (Please ensure that the set is not in Initial Setup mode)

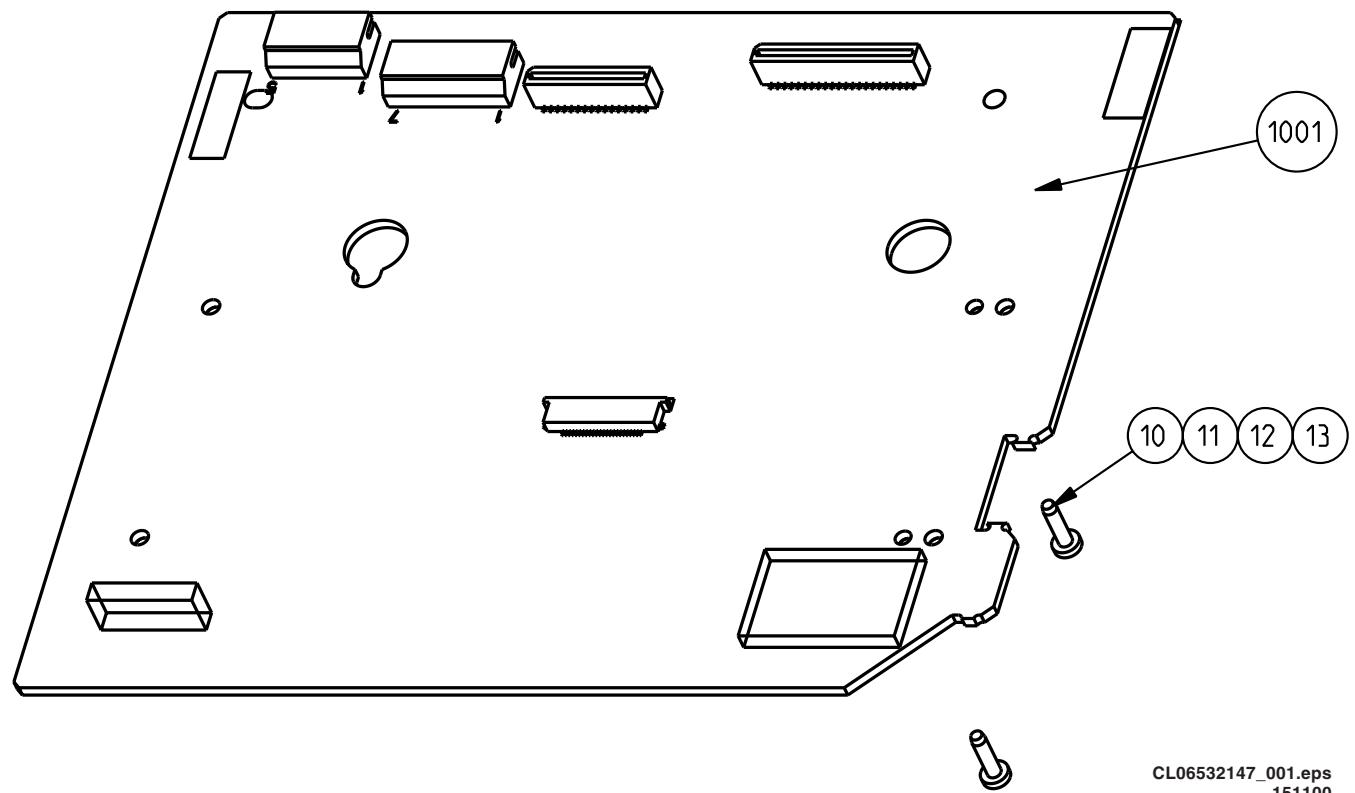
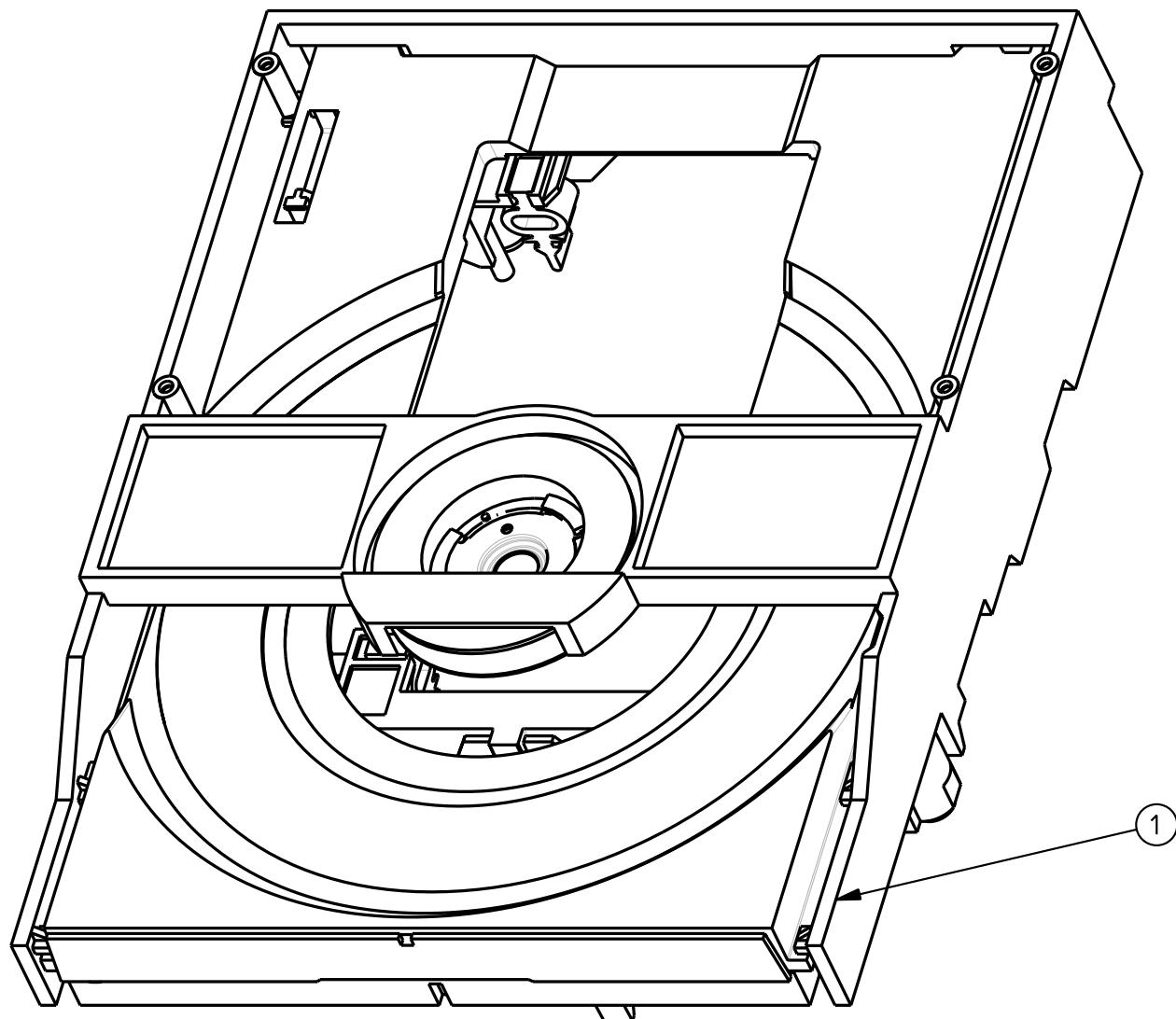
— Operations may not be permitted by the disc. Refer to the instructions of the disc.

— Use a commonly available cleaning CD/DVD to clean the lens before sending the DVD-Video player for repair.

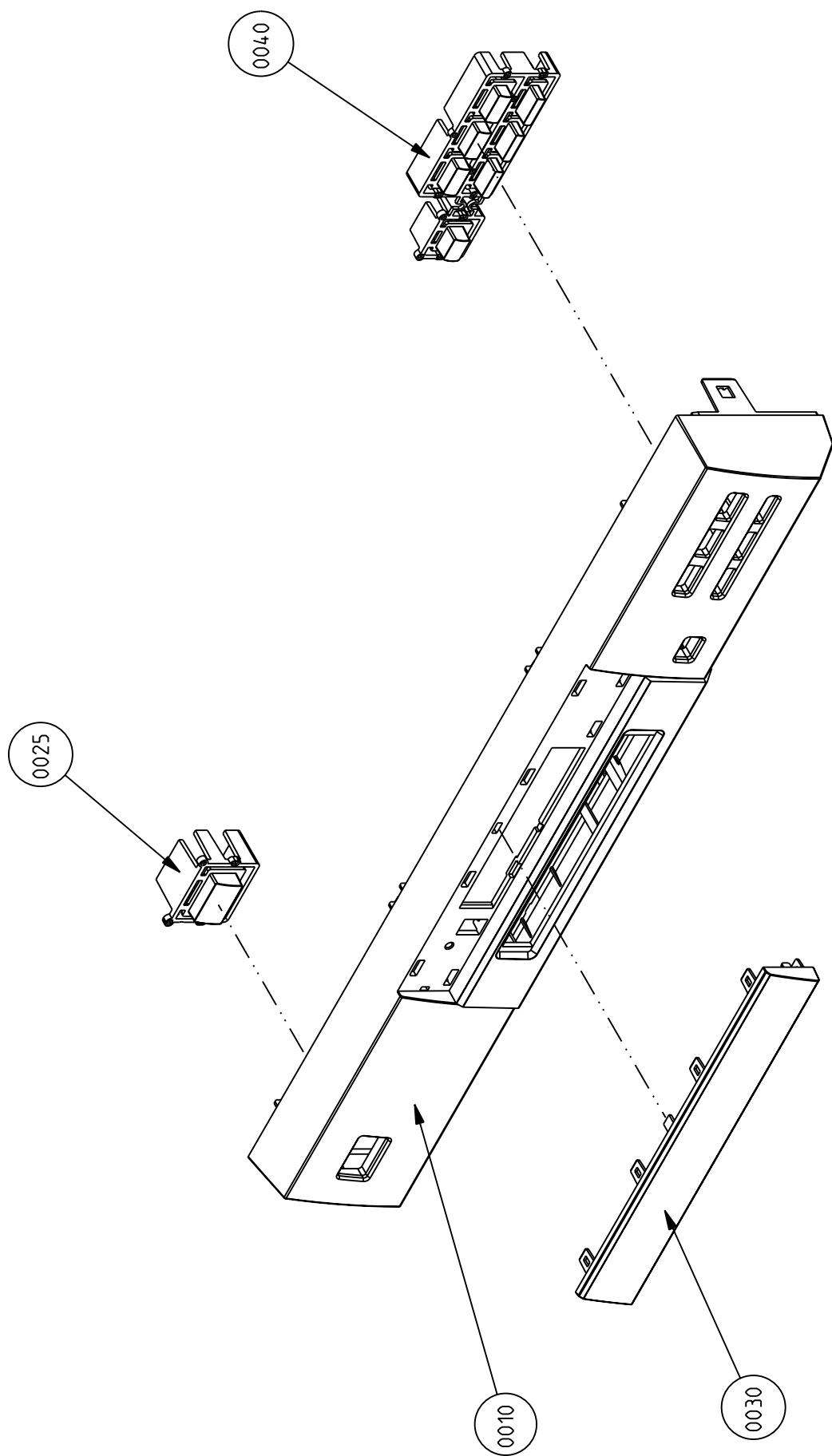
## 4. Mechanical instructions

### 4.1 Dismantling instructions



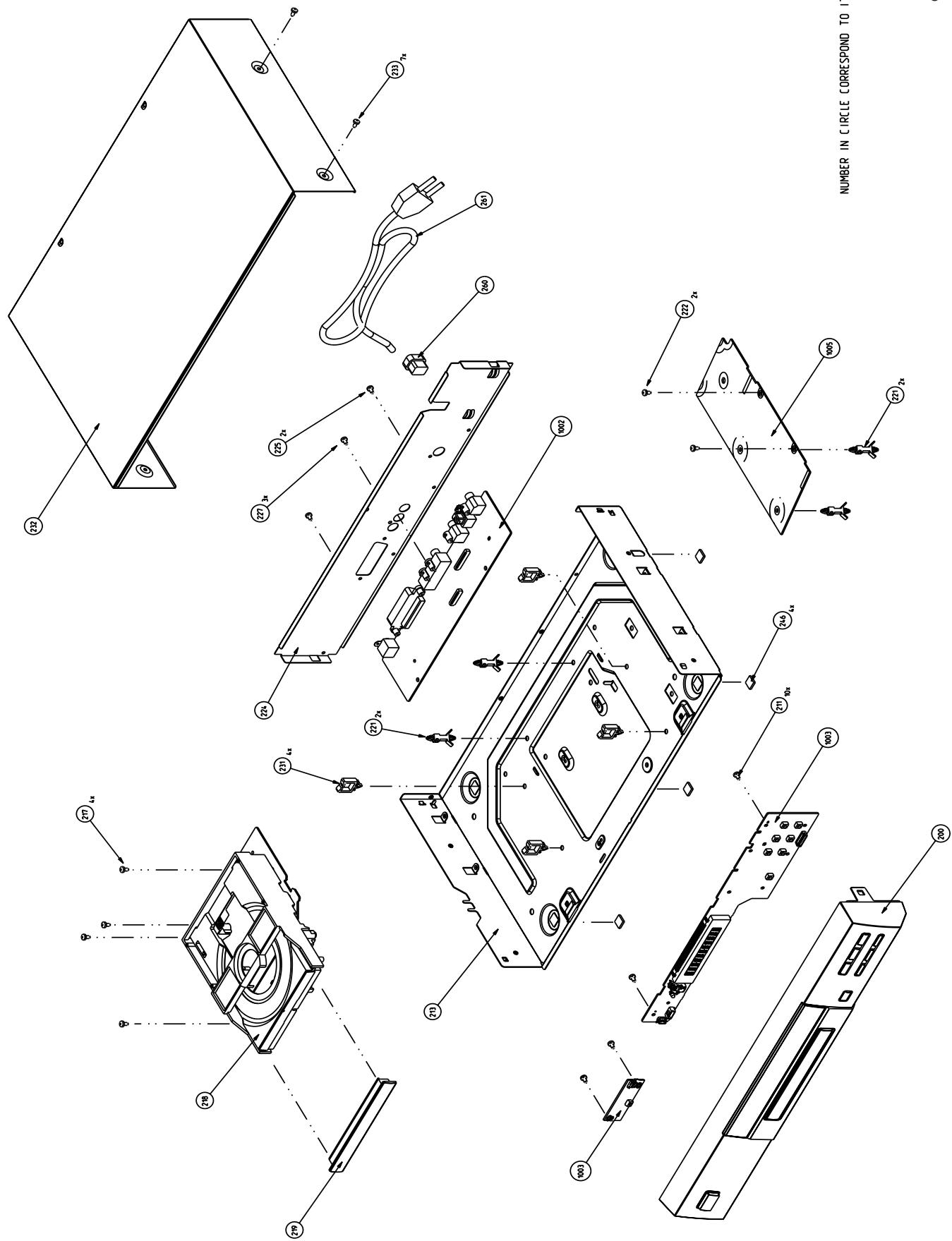


## 4.2 Exploded views



NUMBER IN CIRCLE CORRESPOND TO ITEM NUMBER IN P/L

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020201



### 4.3 Service position

See figure 4-1 for the service position

1. Remove the cables from the cable tie housing.
2. Remove 4 screws that mount the DVD module to the bottom frame.
3. Move the DVD module backward slightly and flip the module over, so that the component side of the board faces upwards, and the module is in the service position.

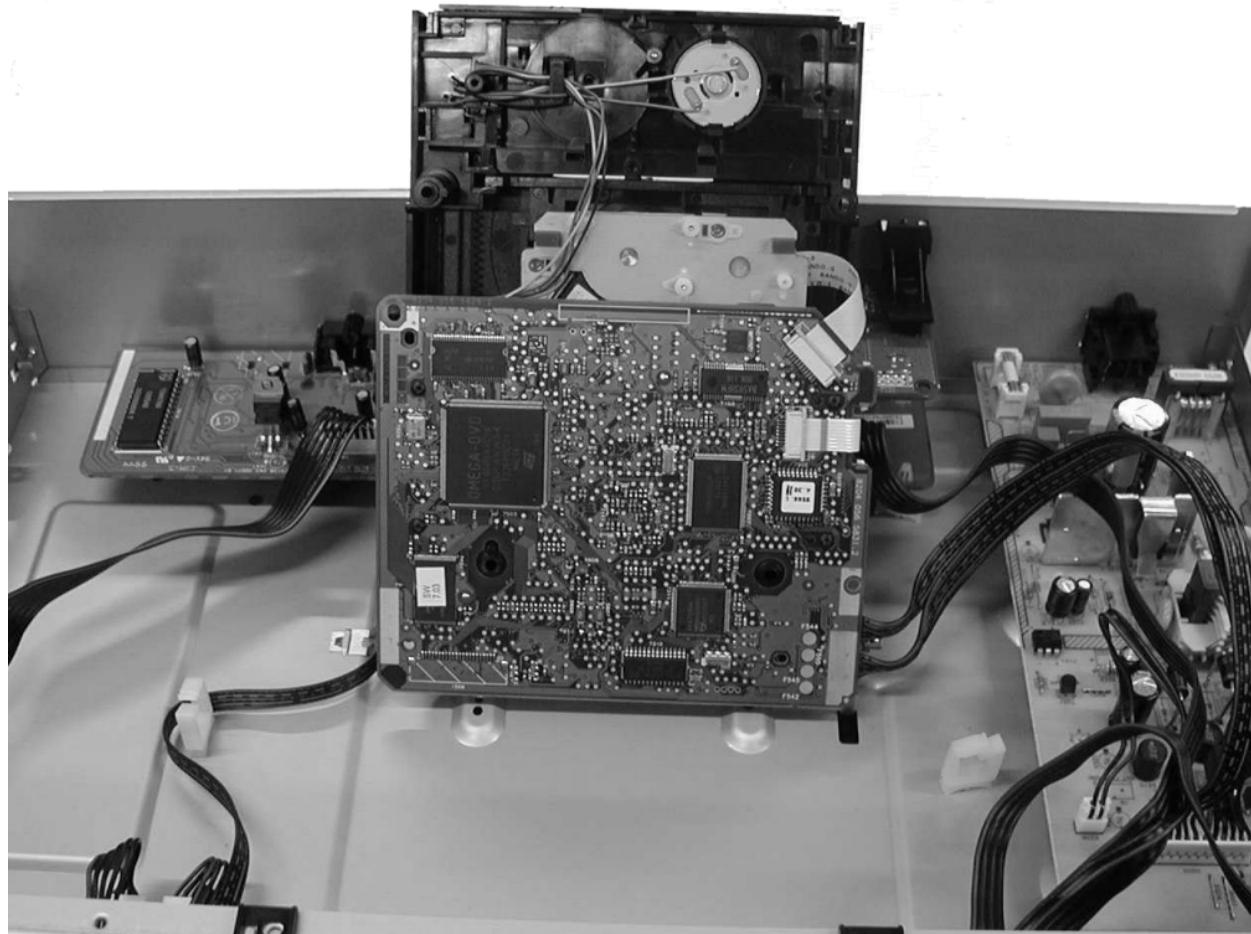


Figure 4-1

## 5. Diagnostic software descriptions and troubleshooting

### 5.1 Dealerscript

#### 5.1.1 Purpose of Dealer Script

The dealer script can give a diagnosis on a standalone DVD player; no other equipment is needed to perform a number of hardware tests to check if the DVD player is faulty. The diagnosis is simply a "error" or "pass" message; no indication is given of faulty hardware modules. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

#### 5.1.2 Contents of Dealer Script

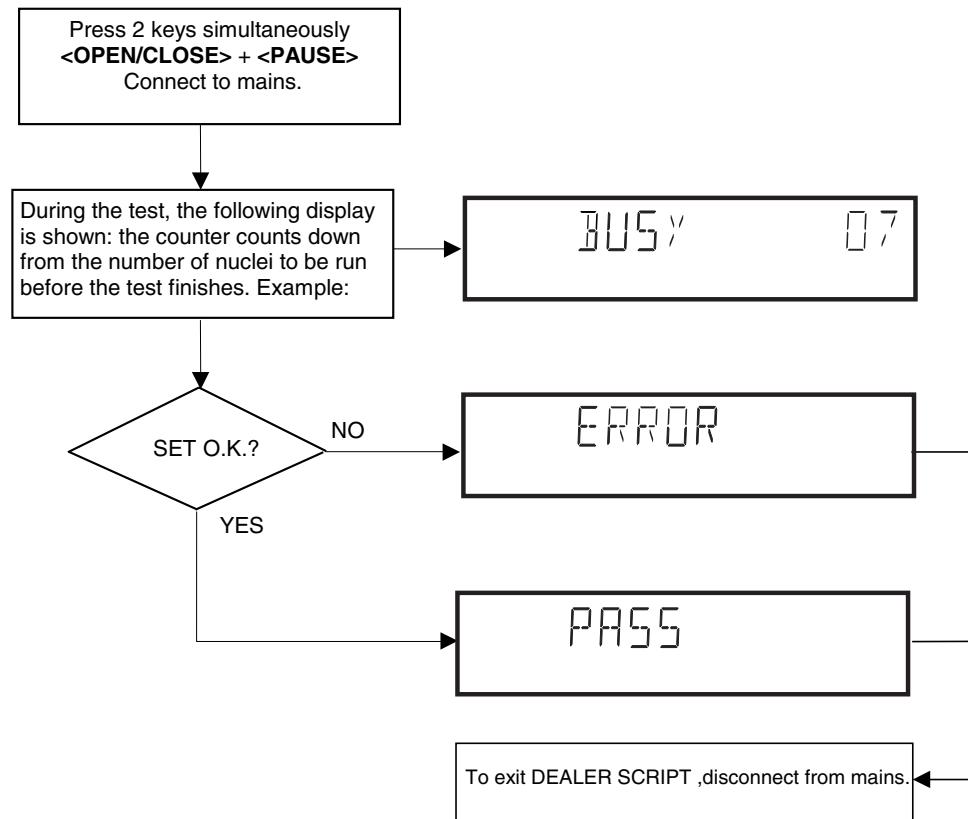
The dealer script executes all diagnostic nuclei that do not need any user interaction and are meaningful on a standalone DVD player.

The nuclei called in the dealer script are the following (the number after each nucleus name corresponds with the number being on the local display when the nucleus is executed during the dealer script):

Nucleus	Description
VideoColSetupComm	7 Checks the I2C interface with the RGB video processor on the Audio/Video board (only for DVD players with RGB video processor).
PapChksFl	6 Calculate and verify checksum of FLASH memory.
PapI2cDisp	5 Checks the I2C interface with the slave processor on the display PCB.
PapS2bEcho	4 Checks the I2C interface to the basic engine.
PapI2cNvram	3 Checks the I2C interface with the NVRAM.
PapNvramWrR	2 Pattern test of all locations in the NVRAM
CompSdramWrR	1 Pattern test of all locations in the SDRAM(s).

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Figure 5-1



CL 96532065\_004.eps  
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Figure 5-2

## 5.2 PLAYER SCRIPT

### 5.2.1 Purpose of Player Script

The Player script will give the opportunity to perform a test that will determine which of the DVD player's modules are faulty, to read the error log and error bits and to perform an endurance loop test. To successfully perform the tests, the DVD player must be connected to a tv set to check the output of a number of nuclei. For DVDr2b a multi-channel amplifier, a set of 6 boxes and an external video source are necessary to test. To be able to check results of certain nuclei, the player script expects some interaction of the user (i.e. to approve a test picture or a test sound). Some nuclei (e.g. nuclei that test functionality of the Basic Engine module) require that the DVD player itself is opened, to enable the user to observe moving parts and approve their movement visually. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

### 5.2.2 Contents of Player Script

The player script contains all nuclei that are useful on a DVD player that is connected to a tv-set and help to determine which module of the DVD player is faulty, as well as to read out the contents of the error logs.

### 5.2.3 Structure of Player Script

The player script consists of a set of nuclei testing the three hardware modules in the DVD player: the Display PWB, the Digital PWB and the Basic Engine. Nuclei run by the player test need some user interaction; in the next paragraph this interaction is described. The player test is done in two phases:

1. Interactive tests: this part of the player test depends strongly on user interaction and input to determine nucleus results and to progress through the full test. Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player.
2. The loop test will loop through the list of nuclei indefinitely, till the NEXT key is pressed. The list of nuclei is as follows:
  - VideoColSetupComm
  - VideoScartSwComm
  - PapChksFlash
  - PapI2cNvram
  - CompSdramWrR
  - PapS2bEcho
  - PapI2cDisp

For DSW version 1.6 and above, the DSW version number will be displayed on the local display. Press NEXT to continue to the display test.

The display should look like the following:

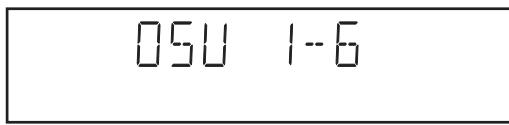


Figure 5-3

### 5.2.4 Survey

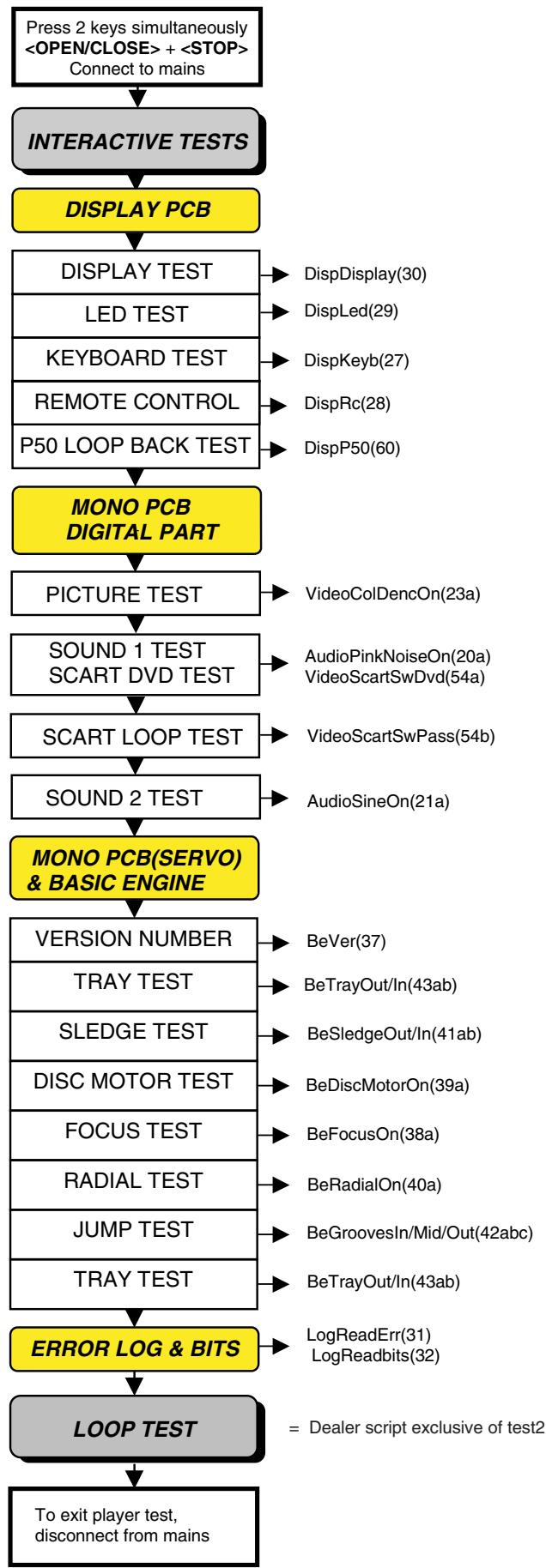


Figure 5-4

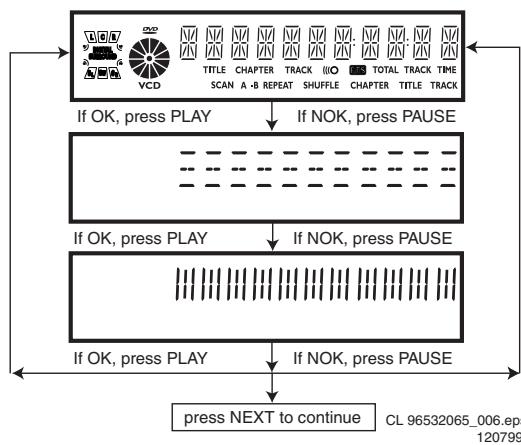
## 5.3 DISPLAY PCB

### 5.3.1 DISPLAY TEST

The display test is performed by nucleus DispDisplay. By putting a series of test patterns on the local display, the local display is tested. To step through all different patterns, the user must either press PLAY (pattern is ok) or PAUSE (pattern was incorrect) to proceed to the next pattern. The display of patterns is continued in a cyclic manner until the user presses NEXT. If the user presses NEXT before all display patterns are tested, the DispDisplay nucleus will return TRUE (display test successful).

### 5.3.2 LED TEST

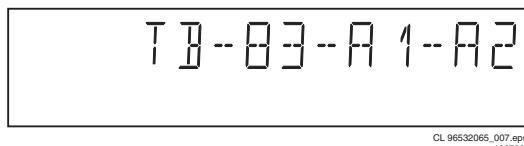
The LED(s) on the DVD player is (are) tested by nucleus DispLed. The user must check if the LED(s) is (are) lighted; if it is, press PLAY, if it is not, press PAUSE. By pressing NEXT the script will proceed to the next test. If the user presses NEXT before PLAY or PAUSE, the DispLed nucleus will return TRUE (LED test successful).



**Figure 5-5**

### 5.3.3 KEYBOARD TEST

The keyboard of the DVD player is tested by nucleus DispKeyb. The user is expected to press all keys on the local keyboard once. The code of the key pressed is shown on the local display (1 hexadecimal digit) immediately followed by a (hexadecimal) number indicating how many times that key has been pressed. Example of the local display during this test:



**Figure 5-6**

The key-codes displayed on the local display will scroll from right to left when the display gets full, the text "tb-" will remain on display.

key id.	key
0	PLAY
1	NEXT
2	PREVIOUS
3	PAUSE
4	STOP
5	OPEN/CLOSE
6	3D-SURROUND
7	KEY- (Mic Control)
8	Once More (Mic Control)
9	KEY+ (Mic Control)
A	STAND BY

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300101

**Figure 5-7**

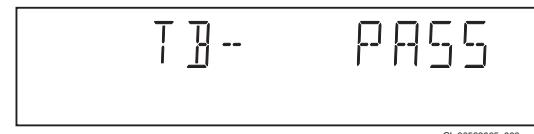
If any keys are detected more than once (due to hardware error), the key-code is displayed twice (or more), with the second digit increased by 1.

If the user does not press all keys minimally once (in any order), the DispKeys nucleus will return FALSE and cause an error in the overall result of the player script.

The test will also pass if all buttons, except the microphone key buttons, are pressed.

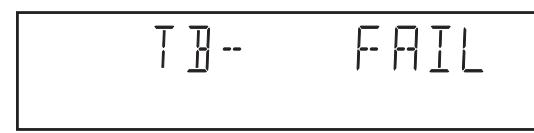
The user can leave the keyboard test by pressing the NEXT key on the local display of the DVD player for at least one full second.

The result of the keyboard test is shown on local display as follows:



**Figure 5-8**

Or

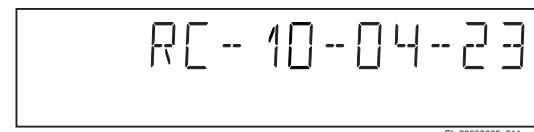


**Figure 5-9**

Pressing NEXT on the local keyboard again will proceed to the next test.

### 5.3.4 REMOTE CONTROL TEST

The remote control of the DVD player is tested by nucleus DispRc. The user must press any key on the remote control just once. The codes of the key pressed will be shown on the local display in hexadecimal format. Example:



**Figure 5-10**

In this example 23 is the hexadecimal code of the pressed RC key. The user can leave the remote-control test by pressing NEXT on the local keyboard of the DVD player. The remote

control test is successful if a code was received before the user pressed the NEXT key; pressing the NEXT key before pressing a key on the remote control gives an error in the remote control test (note that the remote control test will also fail if a key on the remote control was pressed but no code was received). The remote control test does not check upon the contents of the received code, that is it will not be checked if the received code matches the key pressed. If desired, the user can manually check this code by using a code-table for the remote control key-codes.

C Key id	Hexadecimal code
STANDBY	0C
STOP	31
PLAY	2C
PLAY BACKWARD	2D
PAUSE	30
STEP FORWARD	F6
STEP BACKWARD	F5
FORWARD	28
FORWARD 4X	DF
FORWARD 8X	E0
BACKWARD	29
BACKWARD 4X	DE
BACKWARD 8X	DD
SLOW	22
SLOW 2	D9
SLOW BACKWARD	23
SLOW BACKWARD 2	DA
NEXT	20
PREVIOUS	21
CURSOR UP	58
CURSOR DOWN	59
CURSOR LEFT	5A
CURSOR RIGHT	5B
OK	5C
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
TOGGLE	C8
ANGLE	85
AUDIO	4E
SUBTITLES	4B
SUBTITLE ON/OFF	E3
ROOT MENU	54
TITLE MENU	71
MENU	D1
SETUP MENU	82
OSD ON/OFF	F
RETURN	83
RESUME	D7
SCAN	2A
SHUFFLE	1C
REPEAT	1D
A/B REPEAT	3B
TOGGLE SCART	43
OPEN/CLOSE	42
FTS	FB
KARAOKE	E4
OPTION	FA

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Figure 5-11

After pressing NEXT, the result of the remote control test is displayed on the local display of the DVD player as follows:



Figure 5-12

Or



Figure 5-13

Pressing NEXT on the local keyboard again will proceed to the next test.

### 5.3.5 P50 LOOP-BACK TEST

For the P50 loop-back test, the user must first press a key to decide if the test is to be performed.

The display will show the following message:

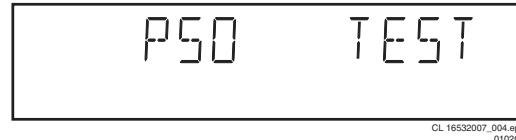


Figure 5-14

If the user presses PAUSE, the P50 test will be skipped.  
If the user presses PLAY, the P50 test is performed and the result is displayed as follows:

Test successfull:



Figure 5-15

Test fails:



Figure 5-16

Press the NEXT key to continue to the next text

## 5.4 MONO PCB DIGITAL PART

### 5.4.1 PICTURE TEST

The picture test is performed by putting a predefined picture (colour bar) on the display (nucleus VideoColDencOn) and

asking the user for confirmation. The display will show the following message:



**Figure 5-17**

By pressing PLAY the user confirms the test, pressing PAUSE will indicate the picture was invisible or incorrect. Pressing NEXT will proceed to the next test

#### 5.4.2 SOUND 1 & SCART DVD TEST

The first soundtest is performed by starting a pink noise sound that needs confirmation from the user (nucleus AudioPinkNoiseOn); the display will show the following message very shortly:



**Figure 5-18**

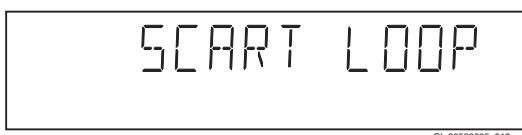
This sound will only be audible from version cut3.1 of Sti5505(item7503 on mono board) onwards. After starting up sound 1, SCART loop-trough will be simultaneously active during this test. SCART loop-trough will be measured with the aid of an external video source.

When entering the SCART loop-trough, the local display indicates:



**Figure 5-19**

On the TV screen a colour bar (generated by nucleus VideoColDencOn) is visual and the internally generated pinknoise is audible. By pressing PLAY the user confirms the test, pressing PAUSE will indicate the sound was inaudible or incorrect. Pressing NEXT will proceed to the next test; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok). By pressing the NEXT button there will be switched over to the external source, this must become now visible on the TV screen (using the SCART). The local display indicates:



**Figure 5-20**

The internally generated colour bar is still available on the CVBS and Y/C outputs. And the pinknoise-signal is still available on the cinch audio outputs. By pressing the PREV button, the internal generated colour bar becomes visual again.

The test can be left by pressing the NEXT key for more than one second.

#### 5.4.3 SOUND 2 TEST

The second soundtest is performed by producing a sine sound (nucleus AudioSineOn). The signal can be stopped by pressing the STOP-key. The display will show the following message:



**Figure 5-21**

By pressing PLAY the user confirms the test, pressing PAUSE will indicate that something went wrong. Pressing NEXT will proceed to the next; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok).

#### 5.4.4 Colour setup test

The colour setup test is performed by putting the internally generated colour bar in different settings on the TV screen. The first colour bar will be displayed in setting 1. the display will show the following message:



**Figure 5-22**

By pressing the NEXT button, you can go to the second setting. The local display indicates:



**Figure 5-23**

By pressing the PREVIOUS button, the colour bar with the first setting becomes visual again.

By pressing PLAY the user confirms the test, pressing PAUSE will indicate that something went wrong.

The test can be left by pressing the NEXT key for more than one second; if the user presses NEXT without pressing PLAY or PAUSE first, the result of the test will be TRUE )colour set-up ok.

### 5.5 BASIC ENGINE

#### 5.5.1 VERSION NUMBER

In the basic engine tests, the version number of the Basic Engine will be shown first, as the following example:

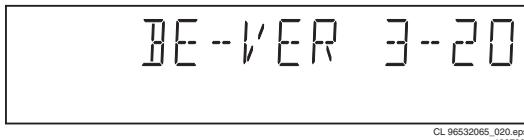


Figure 5-24

By pressing the NEXT key, the Basic Engine tests are started.

#### 5.5.2 TRAY TEST

First, the tray is tested. The purpose of this test is also to give the user the opportunity to put a disc in the tray of the DVD player. Some tests on the Basic Engine require that a disc(e.g. DVD MPTD test disc) is present in the player. At the end of the Basic Engine tests this tray test will be repeated solely to enable the user to remove the disc in the tray. The local display will look as follows:

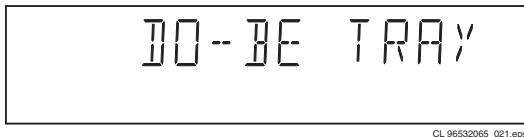


Figure 5-25

By pressing PLAY or PAUSE the user can toggle the position of the tray. Note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT will proceed to the next test, after the tray has been closed (by the software) if it was open.

#### 5.5.3 SLEDGE TEST(visual test)

The second Basic Engine test tests the sledge; the user can move the sledge as many times as desired by using PLAY (nucleus BeSledgeOut) and PAUSE (nucleus BeSledgeIn). Pressing NEXT on the local keyboard proceeds to the next test. Note that this test will not contribute to the test result of the Basic Engine. The local display will look as follows during the sledge test:

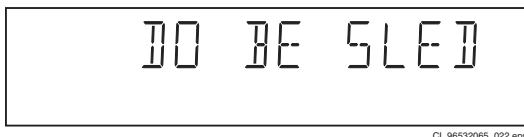


Figure 5-26

#### 5.5.4 DISC MOTOR TEST(visual test)

The third Basic Engine test tests the disc motor (nucleus BeDiscMotorOn); the local display looks as follows:

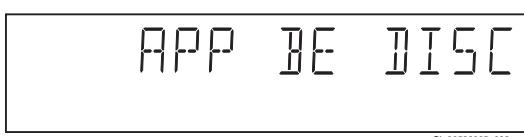


Figure 5-27

By pressing PLAY the user confirms that the disc motor is running; pressing PAUSE indicates the disc motor does not work. Pressing NEXT proceeds to the next test, after a reset

of the disc motor (nucleus BeDiscMotorOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (disc motor is running).

#### 5.5.5 FOCUS TEST(visual test)

The fourth Basic Engine test tests the focussing; first focussing is turned on by calling nucleus BeFocusOn. The display will look as follows:

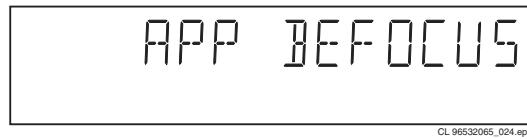


Figure 5-28

By pressing PLAY the user confirms that the focussing was successful; pressing PAUSE indicates a focussing failure. Pressing NEXT proceeds to the next test after a reset of the focussing (nucleus BeFocusOff); if NEXT is pressed before PLAY or PAUSE, the result of this test will be TRUE (focus successful).

#### 5.5.6 RADIAL TEST(visual & listening test)

The fifth Basic Engine test tests the radial functionality (nucleus BeRadialOn); the local display looks as follows:

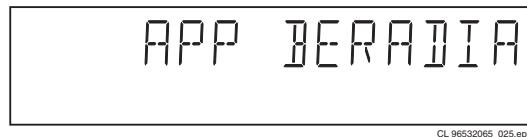


Figure 5-29

By pressing PLAY the user confirms that the radial function worked; pressing PAUSE indicates the function does not work. Pressing NEXT proceeds to the next test, after a reset of the radial (nucleus BeRadialOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (radial successful).

#### 5.5.7 JUMP TEST(listening test)

The sixth and last Basic Engine test tests the jumping by calling nuclei BeGroovesIn, BeGroovesMid and BeGroovesOut. During this test, the local display looks as follows:

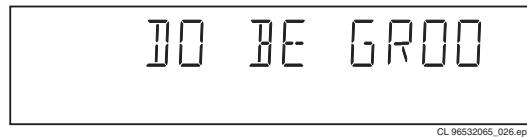
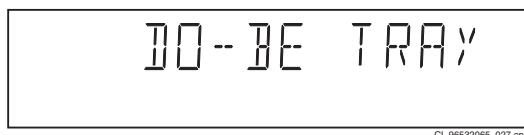


Figure 5-30

The user can switch between the three different types of groove settings by pressing PLAY (forward to next nucleus in the list In-Mid-Out) or PAUSE (backward in the list In-Mid-Out). This is done in a cyclic manner; note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT proceeds to the next test, after the disc motor has been shut off with a call to nucleus BeDiscMotorOff.

### 5.5.8 TRAY TEST

As a last action for the Basic Engine tests, the tray test is repeated. The local display will look as follows:

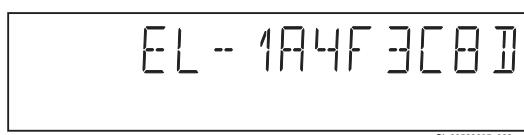


**Figure 5-31**

This test is meant to give the user the opportunity to remove the disc in the tray. The tray position can be toggled using the PLAY and PAUSE key. The tray will be closed (by the software, if it is open) before proceeding to the next test when the user presses the NEXT key.

### 5.5.9 ERROR LOG (see table on page 30)

Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player. Reading the error log is done by nucleus LogReadErr. The display during the errorlog readout looks as follows :

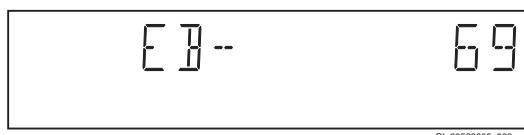


**Figure 5-32**

By pressing PLAY or PAUSE the user can move forward or backward (respectively) through the logged error codes. The highlighted number indicates which errorcode is currently on display (in the example above, errorcode number 4 is displayed). If "0000" is displayed at all positions, the error log is empty. Display of the logged errors is done in a cyclic manner. The errorcode with the lowest highlighted number is the most recent. By pressing NEXT on the local keyboard, the user can proceed to the next test.

### 5.5.10 ERROR BITS (see table on page 30)

Reading the error bits is done by nucleus LogReadBits. The display during the errorbits readout looks as follows:



**Figure 5-33**

Only the set errorbits will be shown by their (decimal) number. Refer to the appropriate documentation for the explanation of each bit number. If the display only shows "EB-0", no error bits were set. By pressing NEXT the user can continue to the next test.

## 5.6 LOOP TEST (see table below)

At the start of the loop test, the display will show the result of the interactive player test:



**Figure 5-34**

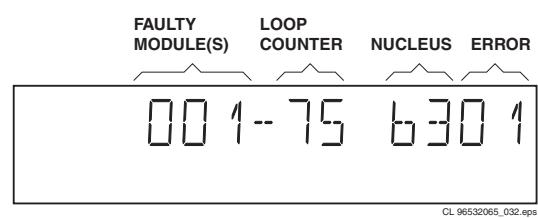
The left side of the display contains a 3-digit code, which can have a value between 000 and 111. These values are to be interpreted as follows:

Displayed Value	Indication for each module		
	Basic Engine	Mono PCB	Display PCB
000	ok	ok	ok
001	ok	ok	faulty
010	ok	faulty	ok
011	ok	faulty	faulty
100	faulty	ok	ok
101	faulty	ok	faulty
110	faulty	faulty	ok
111	faulty	faulty	faulty

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**Figure 5-35**

The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely. The display of the DVD player will display not only the three digits indicating correct/faulty modules and the last found error code (as mentioned, faults are detected as far as they can be within the scope of the diagnostic software), but also a loop counter indicating how many times the loop has been gone through. Example:



**Figure 5-36**

The number after the hyphen indicates the number of times the loop test has been performed; the 4 digits at the right side of the display show the last error that was found when running the loop test: the leftmost two digits of this code indicate which nucleus resulted in a fault; the rightmost two digits refer to the faultcode within that nucleus. For further explanation of this error code, see list of error codes below.

**ERROR CODES LOOP TEST**

<b>ERROR CODE</b>	<b>NUCLEUS NUMBER</b>	<b>ERROR DESCRIPTION</b>
<b>0601</b>	6	Calculated checksum of FLASH is not correct
<b>1101</b>	11	I2C bus busy before start
<b>1102</b>		NVRAM access time-out
<b>1103</b>		No NVRAM Acknowledge
<b>1104</b>		NVRAM reply time-out
<b>1201</b>	12	I2C bus busy
<b>1202</b>		I2C bus not working
<b>1203</b>		Slave controller not responding
<b>1204</b>		Slave response is not correct
<b>1301</b>	13	Parity error from basic engine to serial
<b>1302</b>		Parity error from serial to basic engine
<b>1303</b>		No communication between serial and basic engine
<b>1304</b>		Communication time-out error
<b>1601</b>	16	The SDRAM is faulty
<b>5201</b>	52	I2C bus busy
<b>5202</b>		Error sending I2C command to COLOR SETUP IC
<b>5203</b>		Colour setup IC not responding
<b>5204</b>		Colour setup IC response is not correct
<b>5401</b>	54	I2C bus busy
<b>5402</b>		Error sending I2C command to SCART SWITCH IC
<b>5403</b>		SCART Switch is not responding
<b>5403</b>		SCART Switch response is not correct

CL06532096\_006.eps  
050700**Figure 5-37**

<b>Error log / bits table</b>	<b>Read ERROR LOG in player script</b>	<b>Read ERROR BITS in player script</b>
Basic engine errors	Value:	Value:
Command to the Basic Engine not allowed in this state or unknown command	150101	8
Parameter(s) from the command to the Basic Engine is not valid	150102	7
Sledge could not be moved to the inner home position	150103	6
Focus failure	150104	5
Turntable motor speed could not be reached within timeout	150105	4
Radial servo could not get on track on the disc	150106	3
PLL could not lock in the accessing or tracking state	150107	2
Subcode or sector information could not be read	150108	1
requested subcode could not be found	150109	16
Tray could not be closed or opened completely	15010A	15
TOC could not be read within timeout	15010B	14
The requested seek on the disc could not be executed	15010C	13
A requested lead-in is not on the disc	15010D	12
A non existing burst cutting area is requested	15010E	11
S2b communication error	1501F0	10
S2b communication error	1501F1	9
S2b communication error	1501F3	24
S2b communication error	1501F4	23
S2b communication error	1501F5	22
Digital PWB errors		
Communication error with the Sti 5505	90000	32
Communication error with the Sti 5505	90001	31
Display processor errors		
Communication error with the display processor	190000	40

### 5.6.1 Servicing DVD loader

The DVD Loader / mechanism, VAL6011, has to be exchanged completely in case of failure. A new mechanism can be ordered with codenumber 9305 023 61101.

### 5.6.2 Reprogramming of new mono boards.

#### **Caution**

***This information is confidential and may not be distributed. Only a qualified service person should reprogram the mono board.***

After reset of NV-memory or repair of the mono board, all the customer settings and also the region code will be lost.

Reprogramming of the mono board will put the player back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.

Reprogramming is limited to 25 times

When the counter reaches 25, reprogramming is not possible anymore

Reprogramming will be done by way of the remote control.

Put the player in stop mode, no disc loaded.

Press the following keys on the remote control:

<PLAY> followed by numerical keys <1> <5> <9>

The display shows: “-----”

Press now successively the following keys :

for DVD612 /002 /021 /051 : <0><2><7> <0><0><0><0><0><0><0><0><0><0>

Press <PLAY> again.

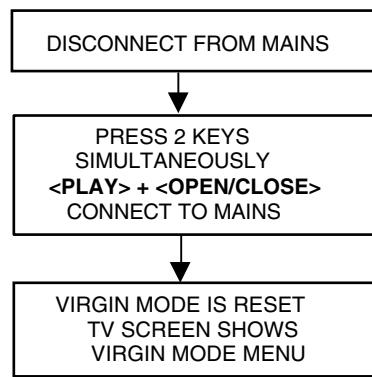
The TV screen will become BLUE during a short time to confirm that the mono board has been reprogrammed, then the set goes to standby mode.

CL 16532007\_008.eps  
010201

Figure 5-38

### 5.6.3 Reset of Virgin Mode

After the player has been powered up for test by the dealer, it would have gone through the Virgin Mode. It is possible to reset the settings made during that mode before the delivery of player to the customer. This can be done as shown in the following diagram:

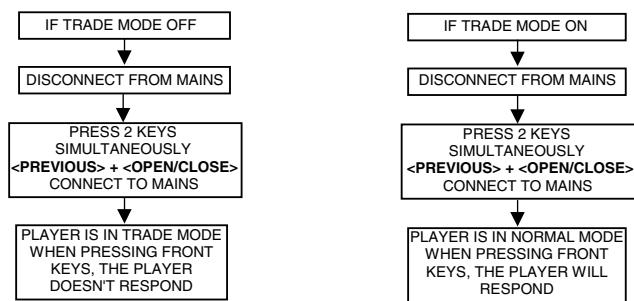


CL 96532065\_034.eps  
070700

Figure 5-39

#### **TRADE MODE**

*When the player is in Trade Mode, the player cannot be controlled by means of the front key buttons, but only by means of the remote control.*



CL 96532096\_008.eps  
050700

Figure 5-40

## 5.7 Test Instruction Audio/Video Board

These test instructions can be used for all versions of the A/V board which has the following outputs:

- Audio L/R
- 5.1 Audio output
- Subwoofer output
- Optical / Coaxial digital output
- CVBS
- Y/G\_vid,U/B\_vid,V/R\_vid output
- S-video
- Scart output

### 5.7.1 General

- All the waveforms measurement carried out in these test instruction will be base on the testpoint indicated in the A/V board schematic diagram in the Service manual.
- Impedance of the measuring-equipment should be >  $1M\Omega$
- Most of the tests can be done using either the Diagnostic software “ Player script” which can be found in the chapter “Diagnostic Software description and troubleshooting” or the Menu interface using the Service PC with a terminal emulation program ( e.g. Window Hyperterminal ) where it is possible to control the execution of the Diagnostic Nuclei
- Setup for the measurement will be done in set level with all modules connected as shown in the Wiring Block diagram.

### 5.7.2 General start-up measurement

#### **Supply check:**

Before starting the measurement, ensure that all power supply are connected to the A/V board.

Pin nbr	Supply
1010-9	-5V ( -Vcc )
1010-10	+5V
1010-11	+5V

The supply currents can be measured using a Tektronics AM503B current probe or equivalent.

Supply	Power consumption ( AVG )
+5VA	+5V $\pm$ 3% I = 200mA
+5Vvid	+5V $\pm$ 3% I = 200mA
-5V	-5V $\pm$ 3% I = 200mA

#### **Clock Check**

Ensure the present of the clock to the DAC

Clock Name	Testpoint	Frequency
PCM_CLK	TP10	11.2896MHz $\pm$ 0.02% tolerance

#### **Audio mute check**

Measure the Audio mute voltage input at pin 12 of connector 1010

Status	Value
AudioMuteOn	4.7V $\pm$ 10%
AudioMuteOff	-8V $\pm$ 10%

To toggle between ON and OFF, use the following commands:

Ref.#	Command Name	Remarks
19a	AudioMuteOn	Audio Mute On
19b	AudioMuteOff	Audio Mute Off

### 5.7.3 Audio DAC and amplifier

Ensure that the Audio mute signal is OFF

To check the DAC and buffer amplifier, send the following commands:

Ref.#	Command Name	Remarks	Audio output
21a	AudioSineOn	Audio Sine signal ON	Sine, 1Khz on stereo
----	Press stop button	Audio Sine signal OFF	No waveform
20a	AudioPinkNoiseOn	Audio Pinknoise ON	Pink Noise on 6 channels
20b	AudioPinkNoiseOff	Audio Pinknoise OFF	No waveform

The audio signal ( sine or pink noise ) will also be present on the digital output ( SPDIF ). This can be checked by connecting digital signal to an amplifier with digital input. Check the I2S and audio signal at the following testpoints:

Name	Testpoint
LRCLK	TP8
SCLK	TP9
PCM_CLK	P10
PCM_OUT0	TP7
PCM_OUT1	TP27
PCM_OUT2	TP28
SPDIF	TP11
Front L/R out-Audio cinch	TP13
H/P L/R out	TP20
Analog out -Audio cinch	TP25

All waveforms can be refer to the waveform diagram in the chapter “Diagnostic software description and troubleshooting”.

### 5.7.4 Video output and buffer amplifier

Check DC output-level at all video cinch output : 1.0V DC  $\pm$  10%

Generate a color bar using the following software commands:

Ref.#	Command Name	Remarks
23a	VideoColDencOn	Colour DENC ON
61a	VideoColOutRGB	RGB Colourbar
61b	VideoColOutYUV	YUV Colourbar
23b	VideoColDencOff	Colourbar DENC OFF

Check the video outputs at the following testpoints:

Name	Testpoint
B_VID	TP1
G_VID	TP2
R_VID	TP3
CVBS out	TP14
S-Video-C out	TP15
S-Video-Y out	TP16
Y out	TP17
U out	TP18
V out	TP19

All waveforms can be refer to the waveform diagram in the chapter “Diagnostic Software description and troubleshooting”.

### 5.7.5 Play and 16/9 detection

Check DC voltage at S-Video-chroma output (pin 4) with a 6K8 ohm load and Scart connector (pin 8) and change the 0/6/12 input (1010-8) using the following commands:

Ref.#	Command Name	Remarks	Chroma output
25a	VideoScartLo	Sends out 0V ± 0.5V	<0.1V
25b	VideoScartMi	Sends out 6V ± 10% with load	2.0V ± 10% without load
			5.0V ± 10% without load
25c	VideoScartHi	Sends out 12V ± 10%	<0.1V

### 5.7.6 Kill circuit

To check the functionality of the Kill circuitry, the audio outputs has to be present by the following command:

Ref.#	Command Name	Remarks	Audio output
21a	AudioPinkNoiseOn	Audio Pinknoise ON	Pink Noise on 6 channels

Check the audio outputs at the audio cinch of the A/V board  
: Pink Noise

Activate the Kill circuit by using the following command:

Ref.#	Command Name	Remarks
19a	AudioMuteOn	Audio Mute On

Check the audio outputs at the audio cinch of the A/V board  
: No waveform

Switch off the kill circuit by using the following command:

Ref.#	Command Name	Remarks
19b	AudioMuteOff	Audio Mute Off

Check the audio outputs at the audio cinch of the A/V board  
: Pink Noise

## 5.8 Test instructions Display board

### 5.8.1 Introduction

These test instructions are written for all versions of the display PCBAS.

The contents of the PCB can be split up into next blocks:

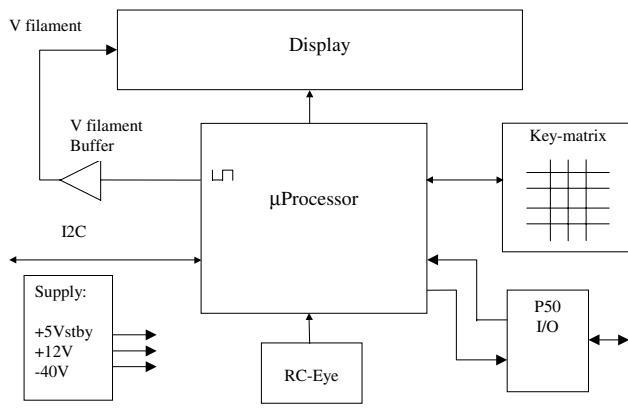


Figure 5-41

### 5.8.2 Functionality description:

The essential component of the display PCB is the µP (slave). This slave works on an 8MHz resonator and has a reset circuit that is triggered by the +5Vstby. After the reset pulse, the standby control line will release the reset of the host µP. This host µP will then initialise the slave. In addition, when going to stand-by, the slave will put the host µP in reset. When the slave receives the right IR or key code to leave the standby mode, the reset of the host µP will be released.

Other slave functions are:

- Square signal generator to generate the filament voltage, which is required for an AC FTD.
- Generates the grid and segment scanning for the FTD.
- Generates a scanning grid for the keys (separated from display scanning).
- Has inputs for RC (RC5 and RC6) and P50 (P50 controller is built in).

### 5.8.3 General

- Oscilloscope measurements have been carried out using a Philips PM3392A.
- Impedance of measuring-equipment should be > 1MΩ.
- To do correct measurements we recommend to use supply 3122 427 22570.

#### 5.8.4 Reset

Check next reset timing with an oscilloscope at pin 10 of the microprocessor.

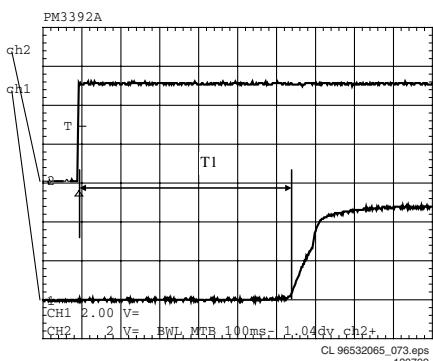


Figure 5-42

Timing: 400msec < T1 > 700msec.

CH1: +5Vstby voltage at power on.

CH2: Voltage at pin 10.

#### 5.8.5 Display steering

Check next timing and level for all grid-lines (G1 r G14).

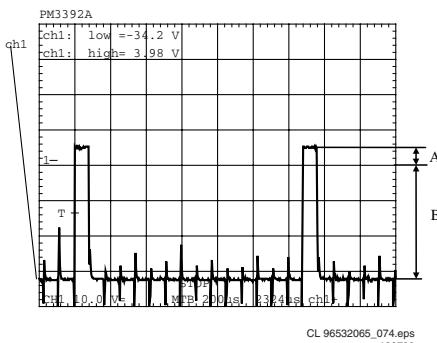


Figure 5-43

1. Check level A: +4V5 +/-10% for grid lines 1 => 11
2. Check level A: +4V0 +/-10% for grid lines 12 => 14
3. Check level B: -33V +/-10%
4. Check timing and levels of segment-lines P1 => P10:

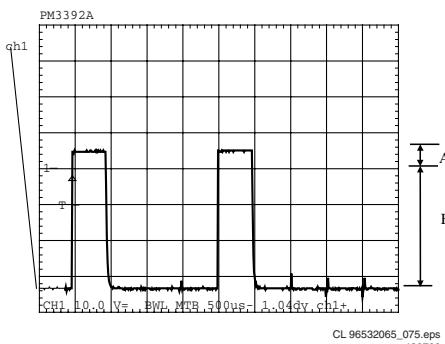


Figure 5-44

Level A:+4V5 +/-10%

Level B:-33V +/-10%

The data on these segment lines depend on the characters that are displayed.

The characters can be set by sending I2C commands to the display.

See the Slave URS how to send a display command.

#### 5.8.6 Key-matrix

Connect a extra 10kΩ pull-up to pin 36 en 37 of the µP and check next matrix scanning at these pins.

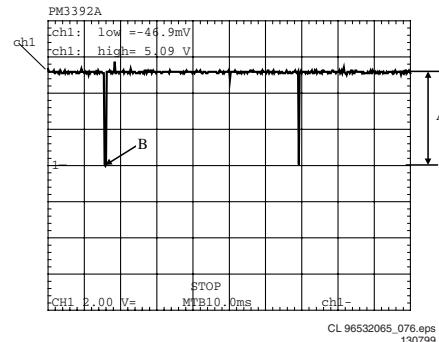


Figure 5-45

Level A: 5.0V +/-7%

Level B: 0V +/-200mV

Check matrix scanning from pin 26 until 33 of the µP.

The results should be the same as the diagram above.

#### 5.8.7 I.R. receiver

Check at pin 23 of the µP if this line switches from low (< 0.3V) to high (> 4.5V), while pressing a key on a Philips RC5 or RC6 remote control.

#### 5.8.8 Karaoke interface

The karaoke interface (4 lines) is a single direction communication.

This means that it consists of four µP output lines.

The interface can be checked by setting or resetting these output-ports via the I2C bus.

Send next command via the I2C bus:

Address	: 0x70
Command byte	: 0x24
Data byte	: xxxxabcd
Where	: a = Karaoke reset. : b = Karaoke data. : c = Karaoke clock. : d = Karaoke strobe.

#### 5.8.9 P50 interface

P50 is a bi-directional serial interface, which is used for communication between video equipment. For European sets, this communication goes via pin 10 of the scart-bus. In other regions, it can be a cinch bus at the back of the set.

1. Keep the µP in reset by short-circuiting emitter and collector of transistor 7108, via resistor 3100 and 3104 transistor 7101 is switched on.
2. Check the voltage at the P50 output connector 1118-5: < 200mV.

When the reset is released the µP output-pin becomes low and transistor 7101 is switched off.

1. Check the voltage at the P50 output connector 1118-5: 4V9 +/-5%.
2. Check also the µP P50 input (µP pin 20): 5V +/-5%.
3. Connect the P50 line (connector 1118-5) to ground.
4. Check again the µP P50 input (µP pin 20): <0V3.

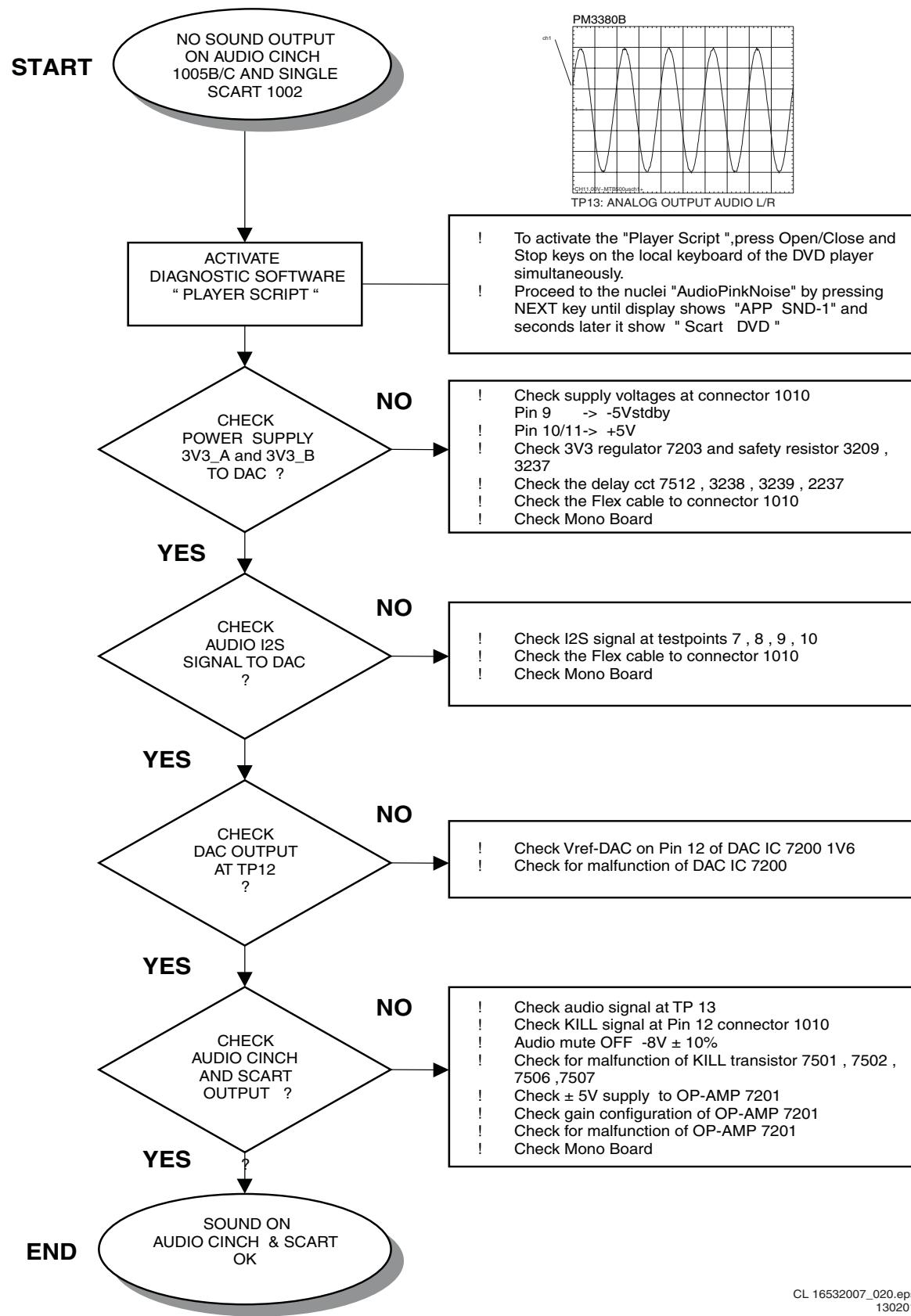
## 5.9 Troubleshooting

### 5.9.1 Troubleshooting A/V board

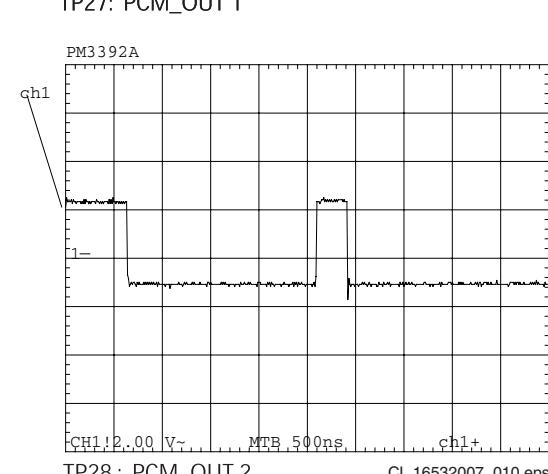
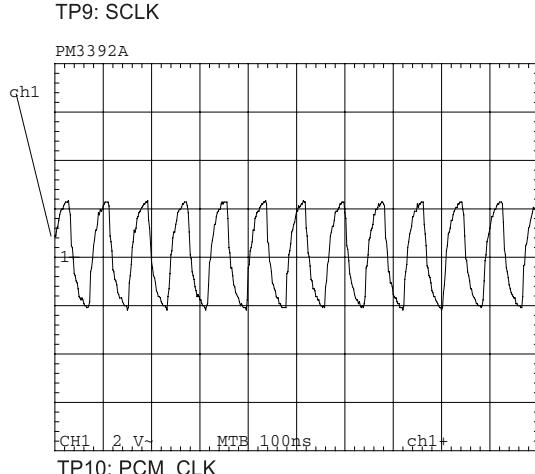
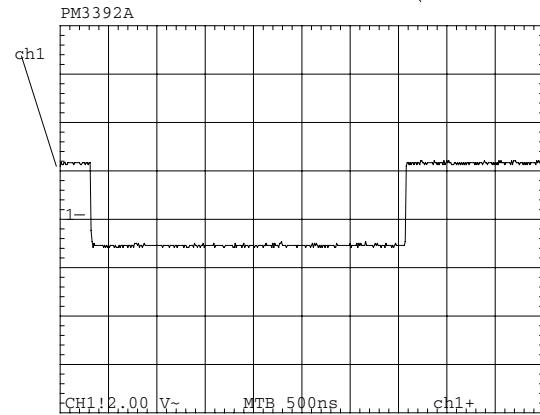
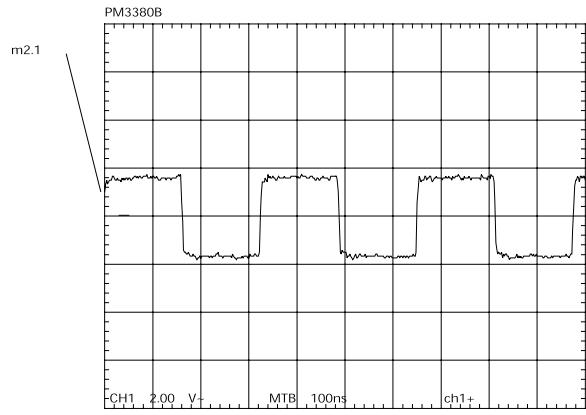
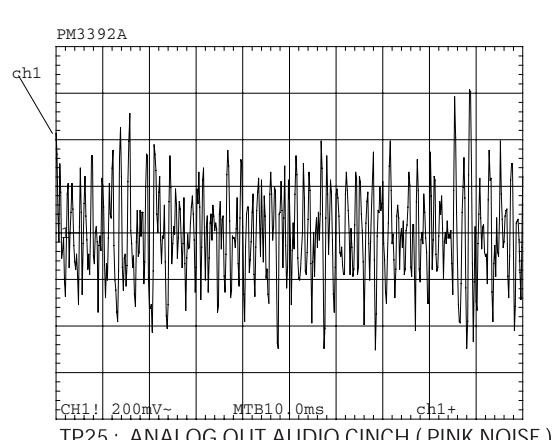
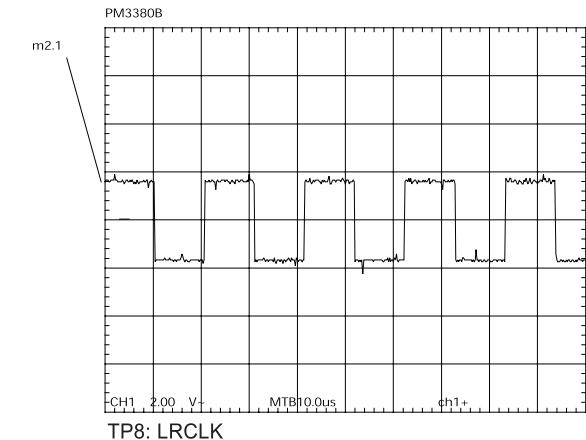
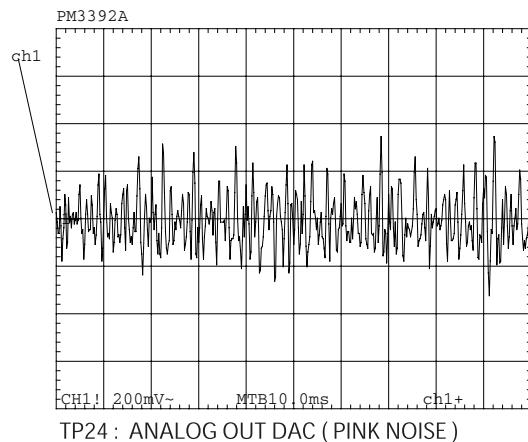
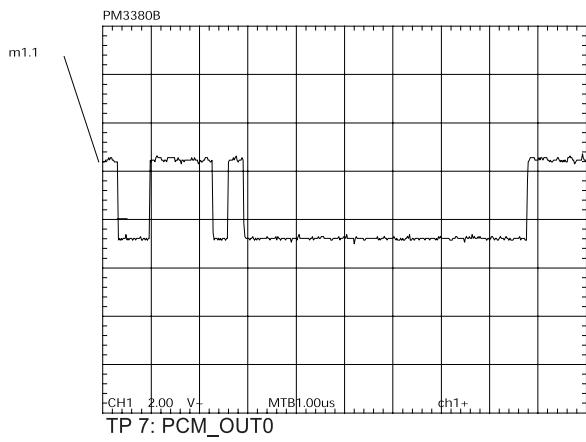
Testing of A/V board can be done using diagnostic software "PLAYER SCRIPT".

MONO board is used to generate a sound with the sound tests SND-1 and SND-2 or a VIDEO signal with the picture "DIAGNOSTIC SOFTWARE: SCRIPT INTERFACES".

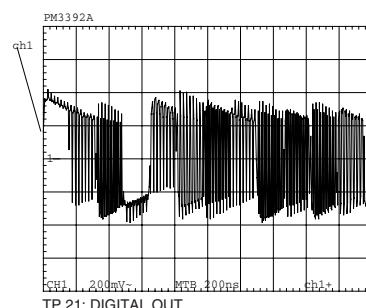
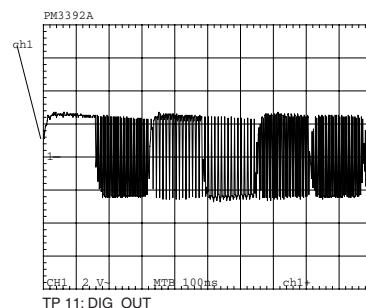
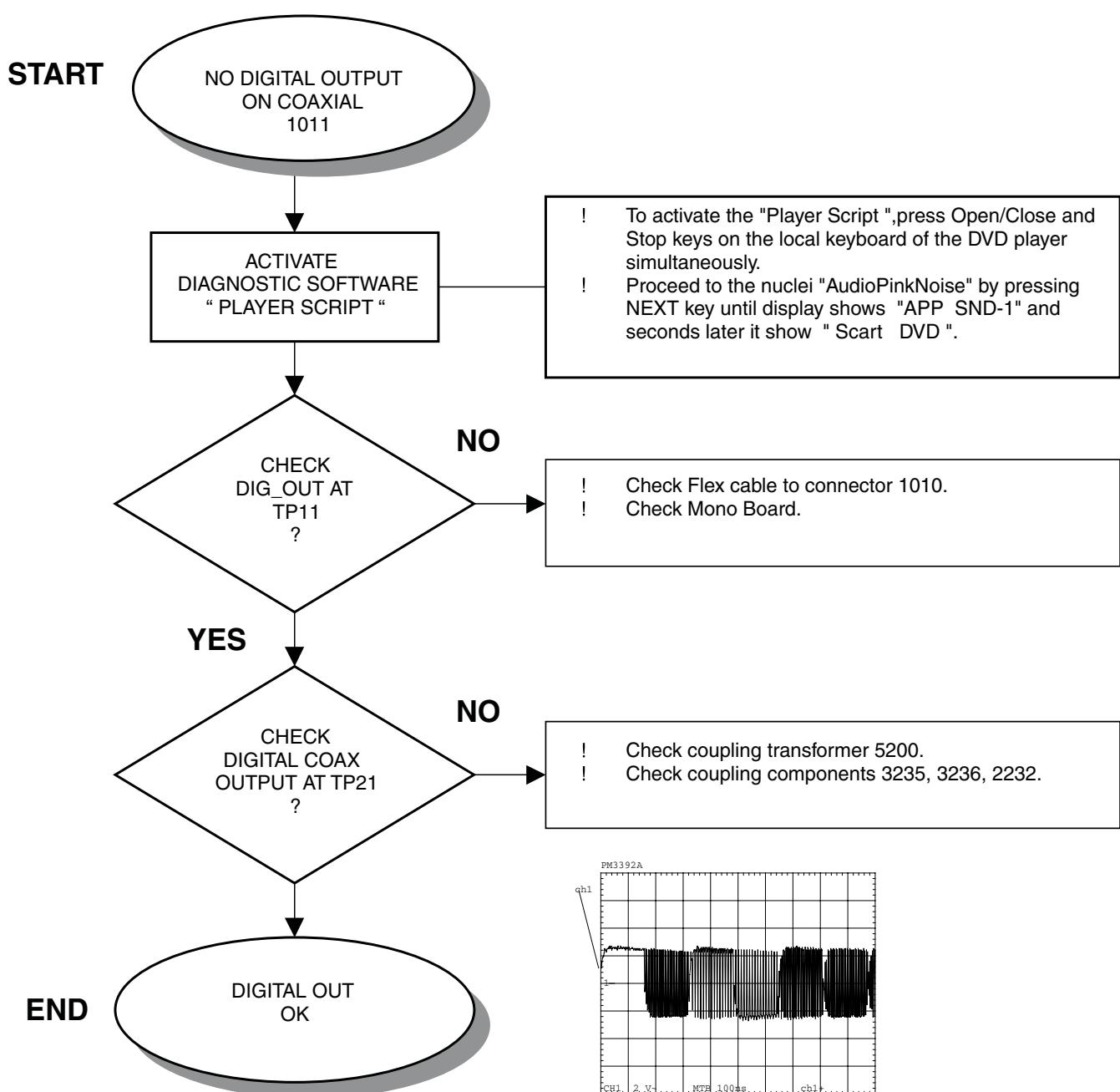
#### AUDIO PART OF AUDIO/VIDEO BOARD 3139 243 30241



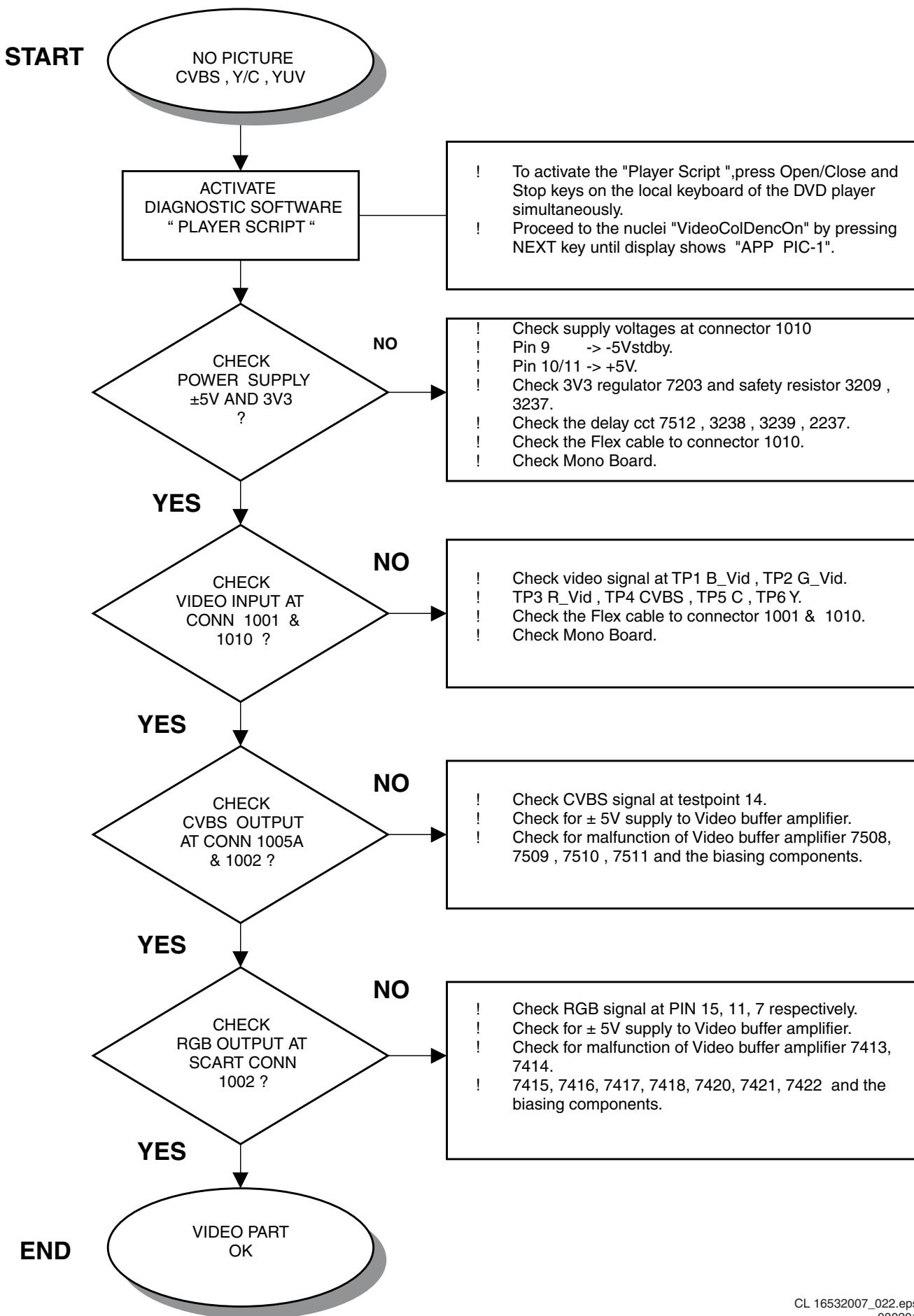
## AUDIO WAVEFORM MEASUREMENT



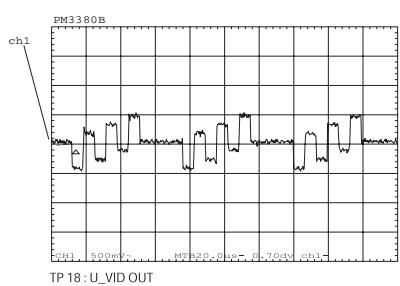
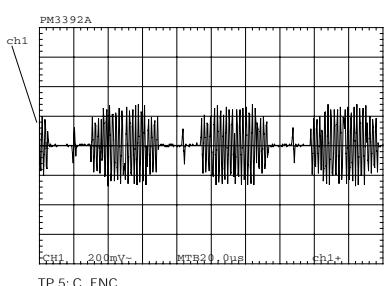
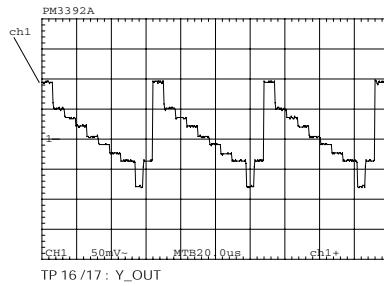
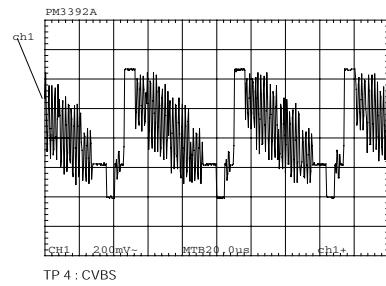
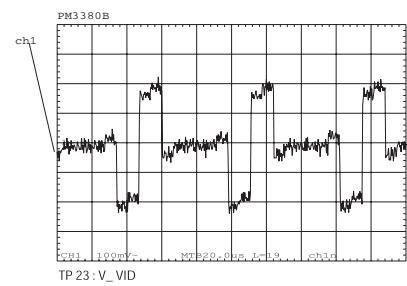
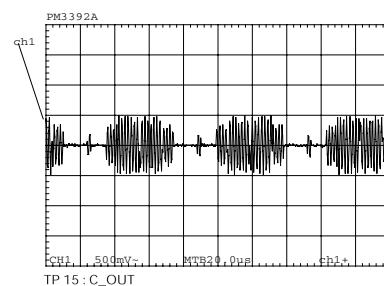
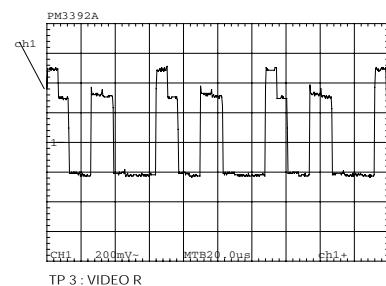
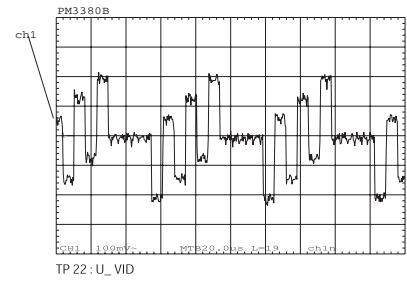
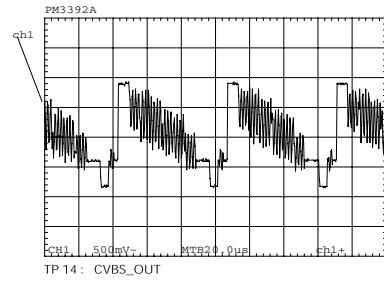
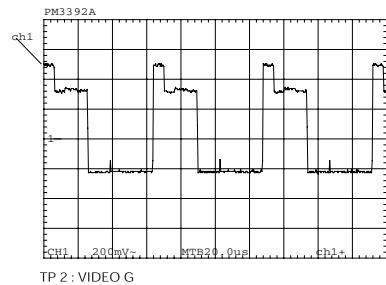
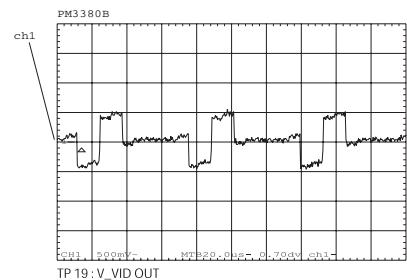
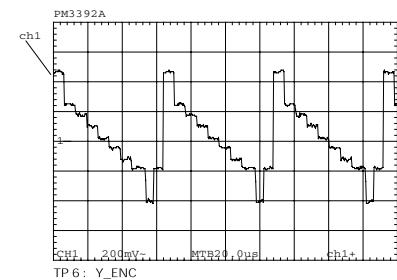
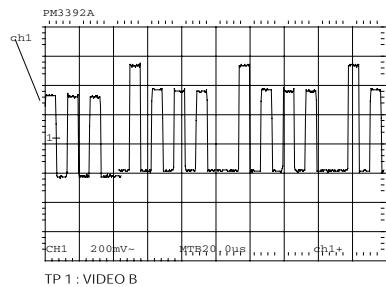
## AUDIO PART OF AUDIO/VIDEO BOARD 3139 243 30241



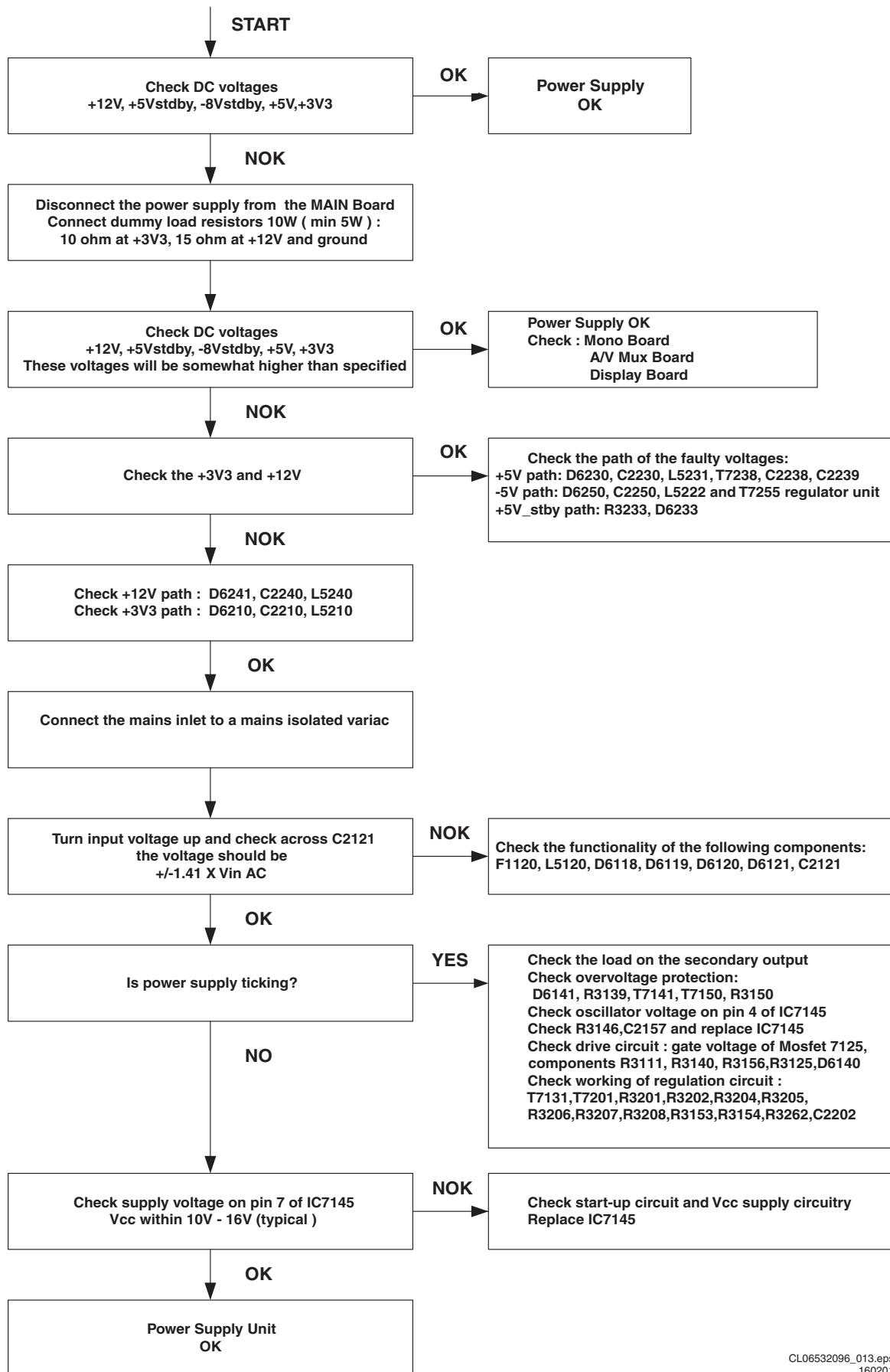
## VIDEO PART OF AUDIO/VIDEO BOARD 3139 243 30241



## VIDEO WAVEFORM MEASUREMENT



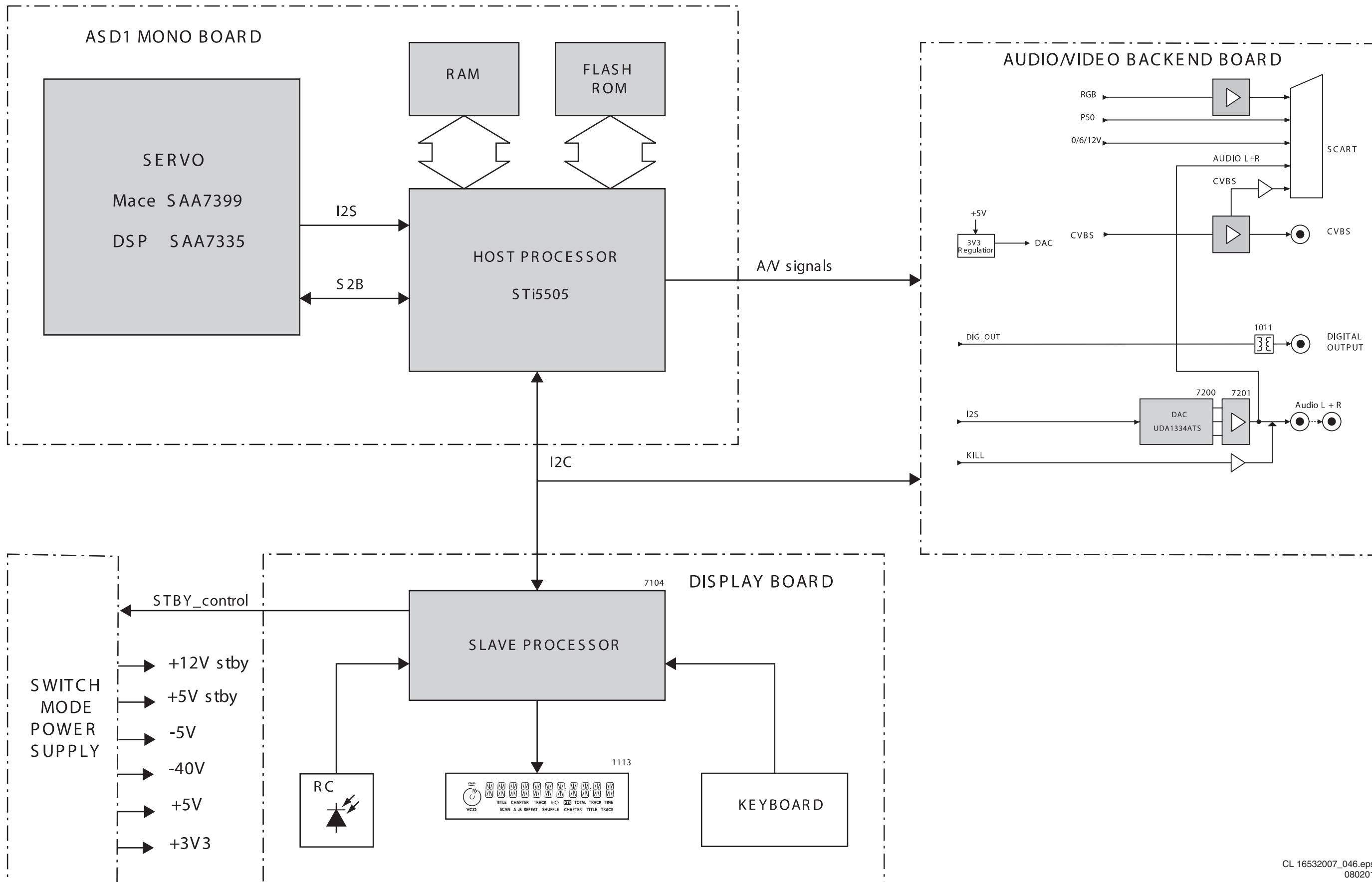
## TROUBLESHOOTING POWER SUPPLY UNIT VFM EURO

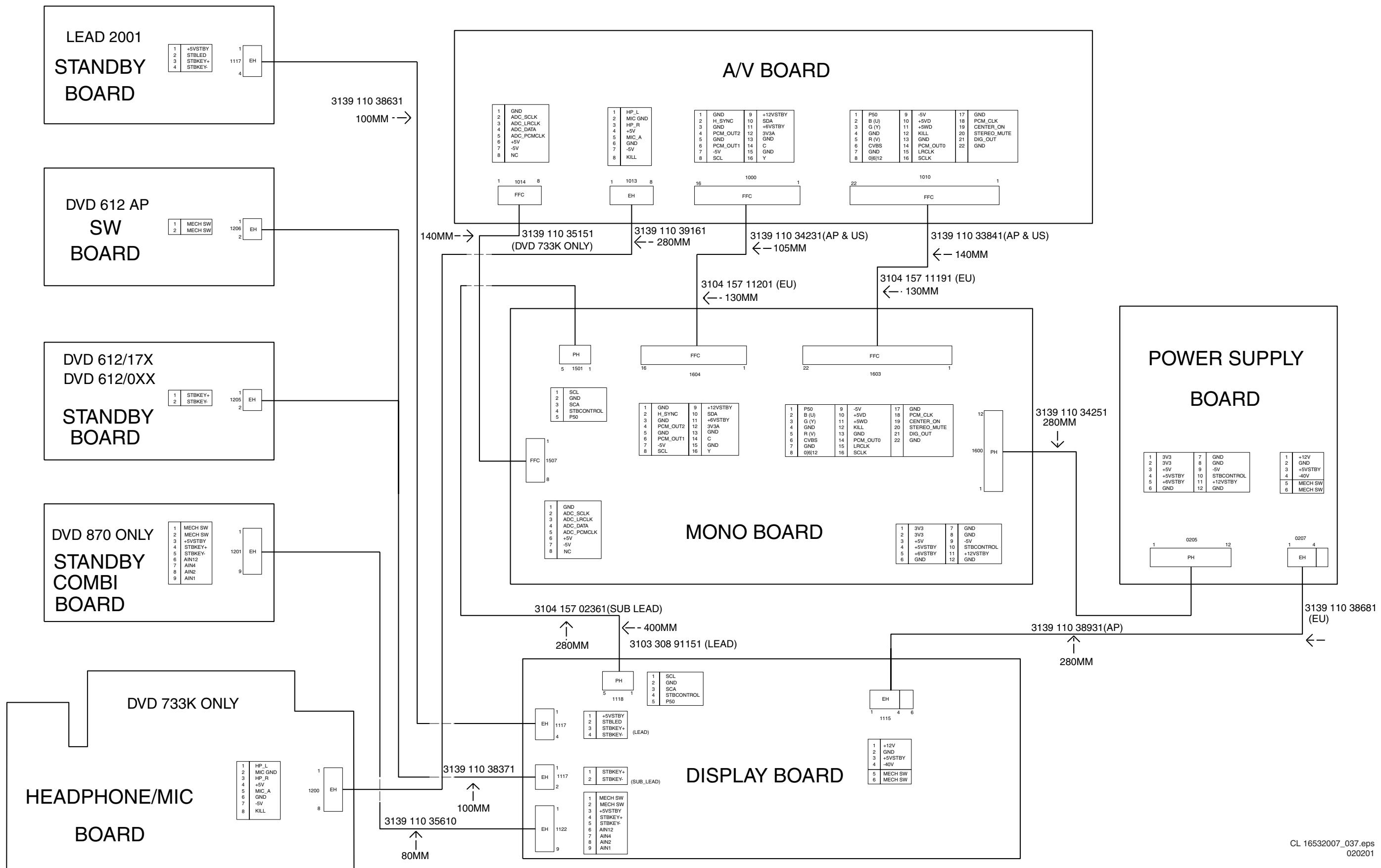


## 6. Block- and wiringdiagram.

### Blockdiagram DVD 612 /XX1

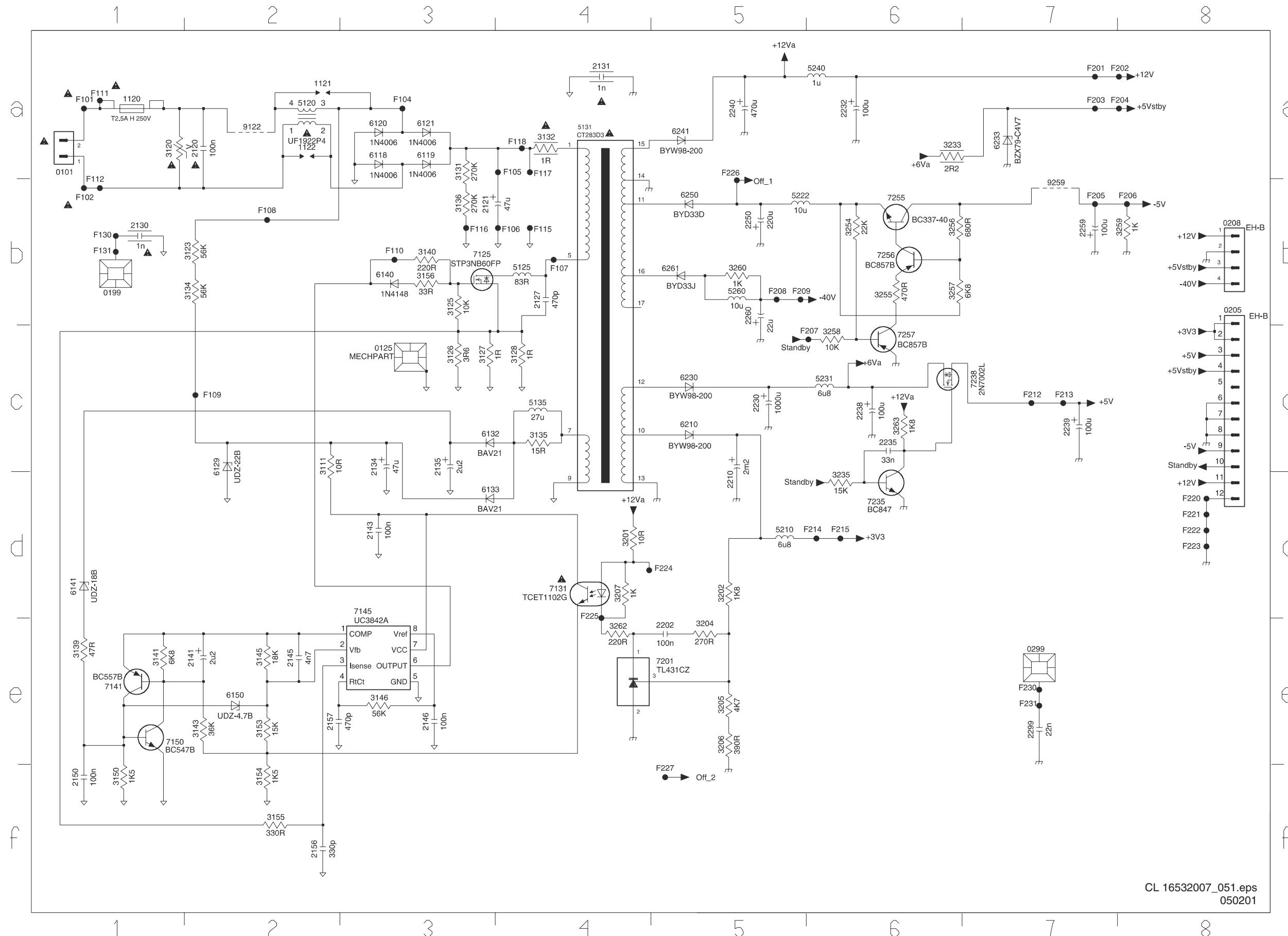
Block Diagram DVD612/XX1



**Wiringdiagram**

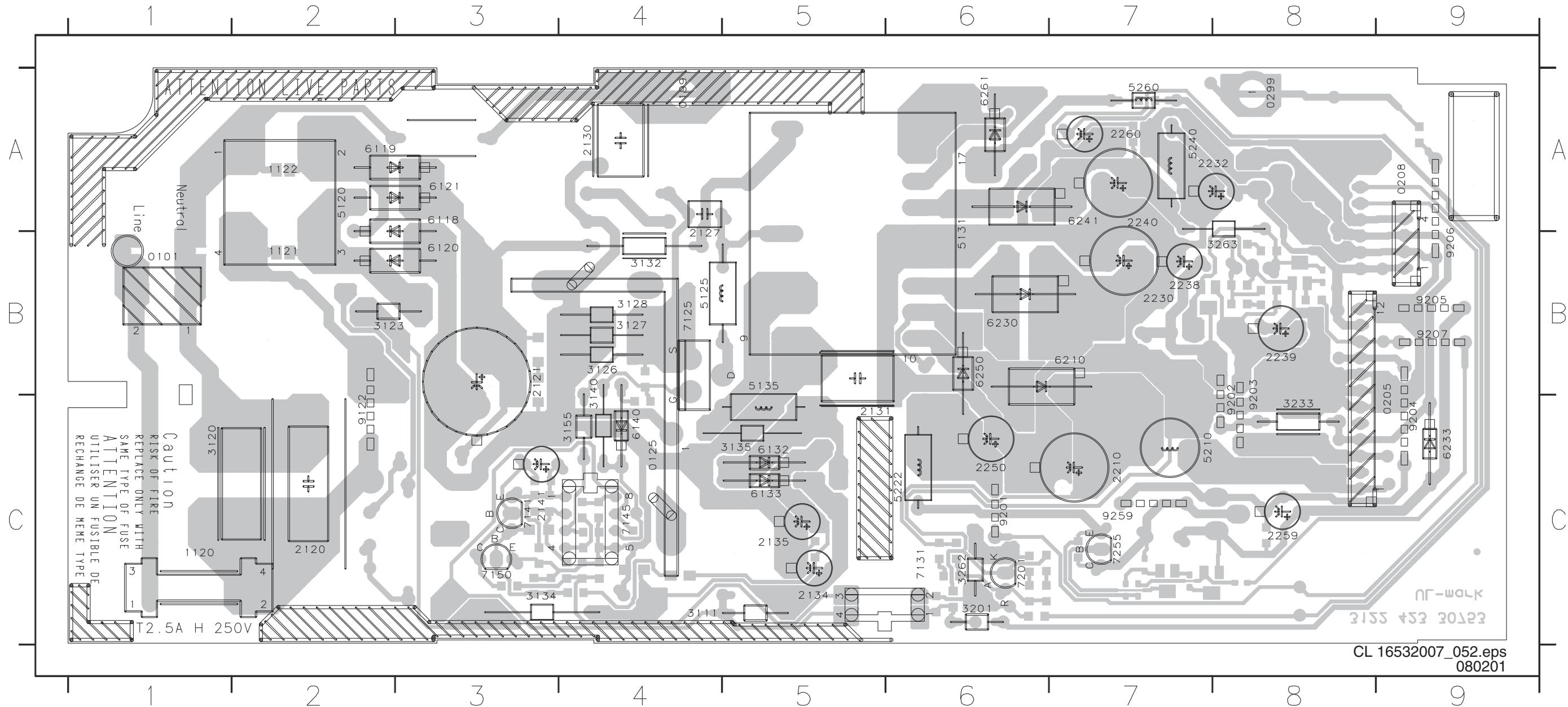
## **7. Electrical diagrams and Print-layouts**

**Power Supply Unit VFM EURO (3122 427 22570)**



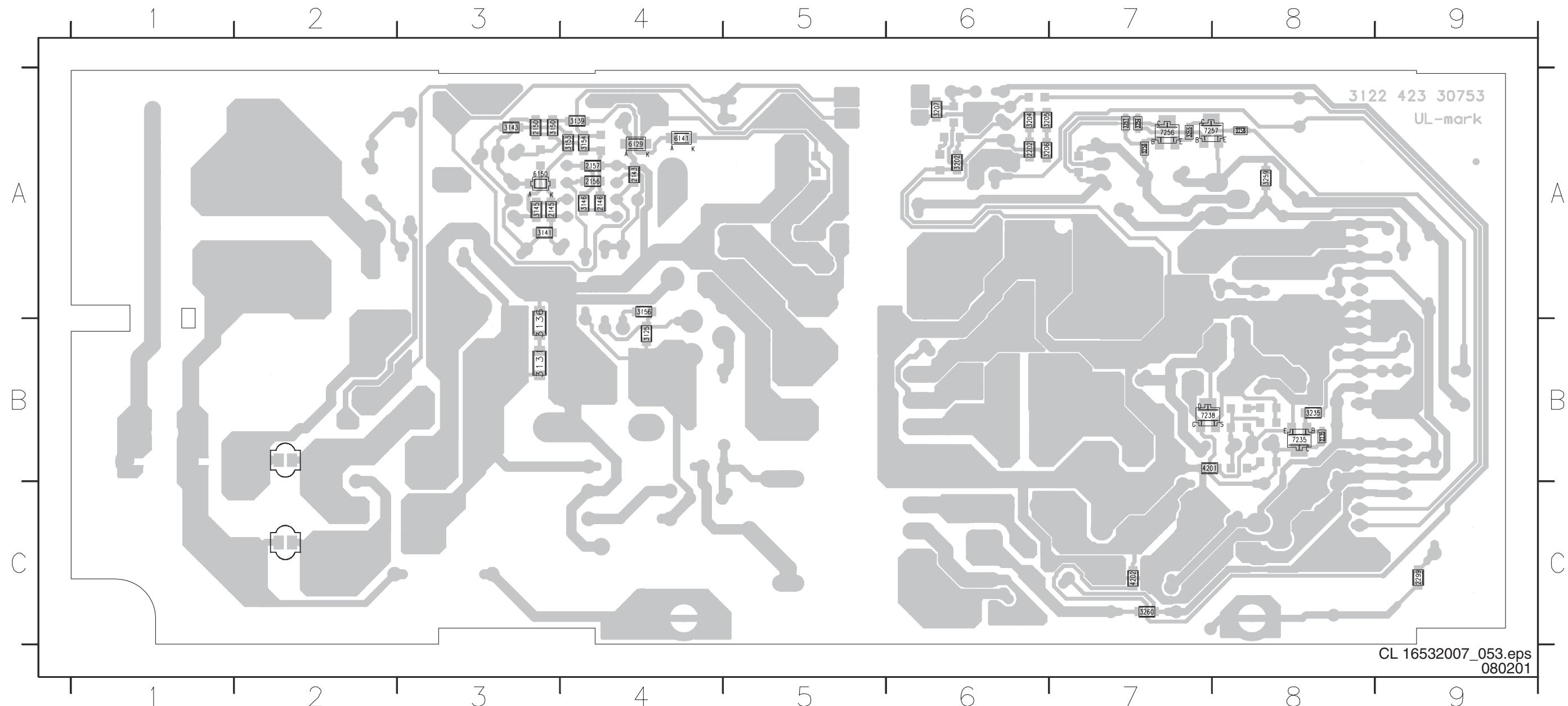
**Layout Power Supply Unit VFM EURO (component side)**

0101 B1 0209 A9 2121 B3 2130 A4 2135 C5 2232 A8 2240 A7 2259 C8 3111 C4 3123 B2 3133 A3 3201 C6 5120 A2 5210 C7 5260 A7 6120 B3 6128 A4 6211 C6 6241 A7 7125 B4 7201 C6 7259 C8 9203 B8 9259 C7  
 0125 C4 0299 A8 2122 C2 2131 C5 2141 C3 2233 A8 2241 A6 2260 A7 3112 C5 3126 B4 3134 C3 3232 B8 5121 B2 5222 C6 6110 A3 6121 A3 6132 C5 6230 B6 6250 B6 7131 C6 7233 A8 9122 C2 9204 C9  
 0199 A4 1120 C1 2123 B3 2132 C5 2210 C7 2236 B6 2250 C6 2261 A7 3120 C1 3127 B4 3135 C5 3233 C8 5125 B4 5230 B7 6111 C3 6122 C3 6133 C5 6231 B6 6259 C7 7141 C3 7236 B7 9125 B4 9205 B9  
 0205 C9 2119 B2 2127 B4 2133 C5 2211 B7 2238 B7 2251 B6 2263 A6 3121 C3 3128 B4 3140 B4 3262 C6 5131 B6 5231 B7 6118 A3 6123 B3 6140 C4 6233 C9 6260 A6 7145 C4 7237 B8 9201 C6 9206 B9  
 0208 A9 2120 C2 2129 C4 2134 C5 2230 B7 2239 B8 2253 C7 3105 C1 3122 B2 3132 B4 3155 C4 3263 B8 5135 B5 5240 A7 6119 A2 6127 A4 6210 B7 6240 B6 6261 A6 7150 C3 7255 C7 9202 C8 9207 B9

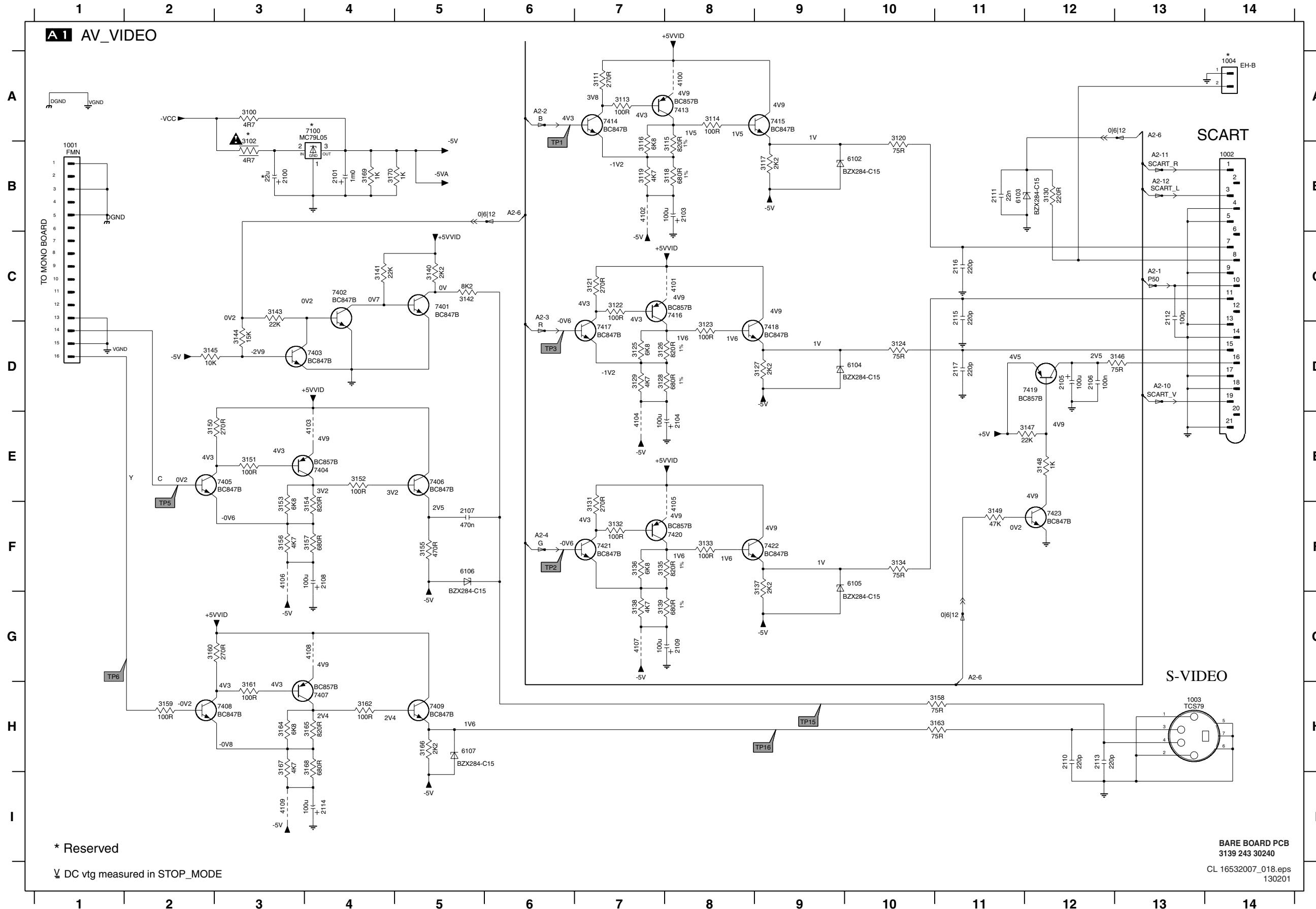


**Layout Power Supply Unit VFM EURO (bottom side)**

2142 A3 2146 A4 2156 A4 2202 A6 2235 B8 3125 B4 3137 A5 3143 A3 3150 A3 3156 A4 3204 A6 3207 A6 3235 B8 3241 B8 3255 A7 3258 A8 4201 B7 6141 A4 7238 B7  
2143 A4 2150 A3 2157 A4 2203 A6 2262 B8 3131 B3 3139 A4 3145 A3 3153 A4 3202 A6 3205 A6 3208 A6 3236 B8 3253 A7 3256 A7 3259 A8 4202 C7 6150 A3 7256 A7  
2145 A3 2152 A4 2201 A6 2234 B8 2299 C9 3136 B3 3141 A3 3146 A4 3154 A4 3203 A6 3206 A6 3234 B8 3237 B8 3254 A7 3257 A7 3260 C7 6129 A4 7235 B8 7257 A7



## **A/V Board (Video control & SCART )**



\* Reserved

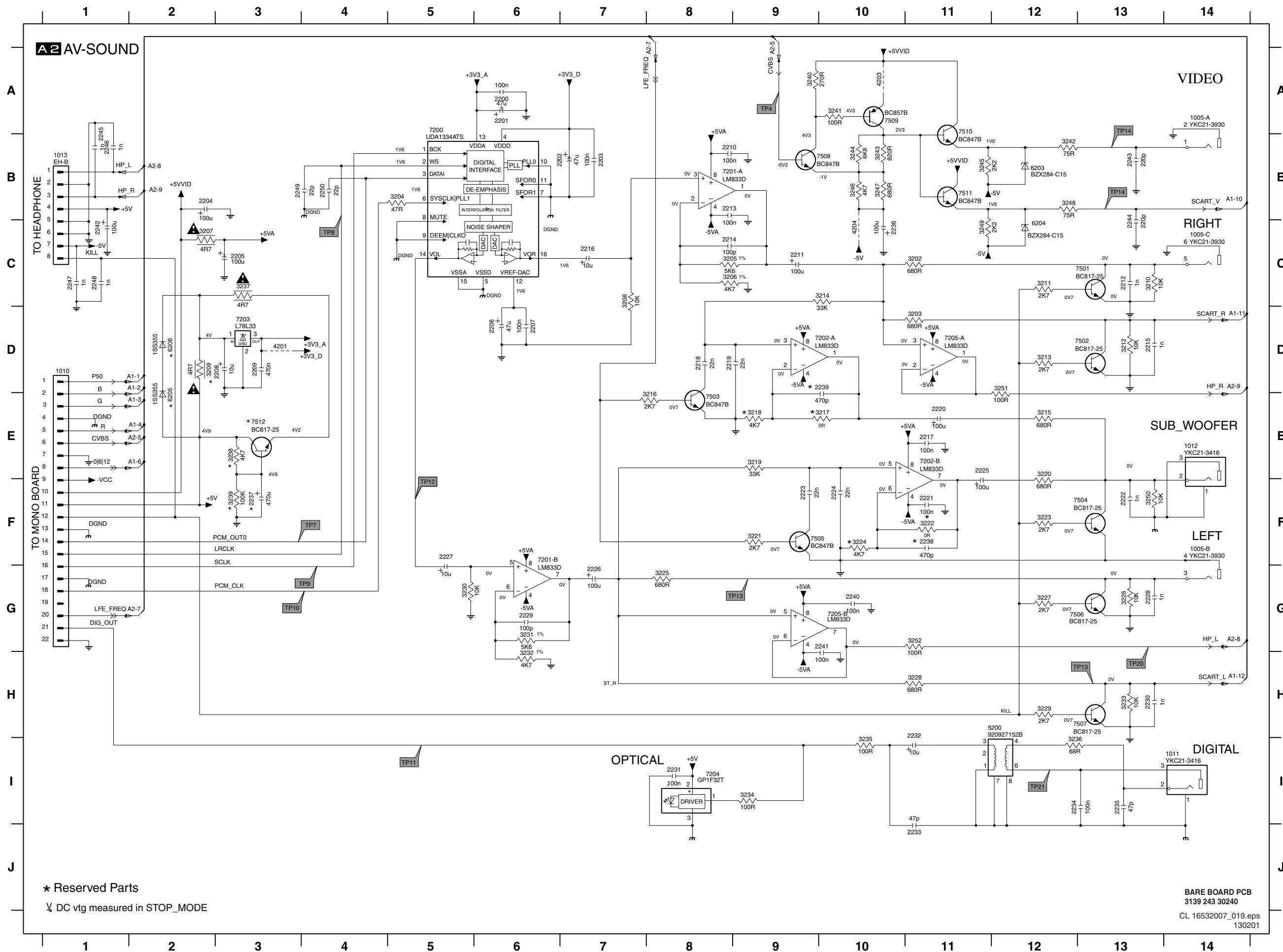
↙ DC vtq measured in STOP\_MODE

ARE BOARD PCB  
39 243 30240

CL 16532007\_018.eps  
130201

1001 B1 7420 F8  
1002 B14 7421 F7  
1003 H13 7422 F9  
1004 A14 7423 F12  
2100 B3  
2101 B4  
2103 B8  
2104 E8  
2105 D12  
2106 D12  
2107 F5  
2108 F4  
2109 G8  
2110 H12  
2111 B11  
2112 C13  
2113 H12  
2114 I4  
2115 C11  
2116 C11  
2117 D11  
3100 A3  
3102 B3  
3111 A7  
3113 A7  
3114 A8  
3115 B8  
3116 B7  
3117 B9  
3118 B8  
3119 B7  
3120 A10  
3121 C7  
3122 C7  
3123 D8  
3124 D10  
3125 D7  
3126 D7  
3127 D9  
3128 D7  
3129 D7  
3130 B12  
3131 F7  
3132 F7  
3133 F8  
3134 F10  
3135 F7  
3136 F7  
3137 F9  
3138 G7  
3139 G7  
3140 C5  
3141 C4  
3142 C5  
3143 C3  
3144 D3  
3145 D2  
3146 D13  
3147 E12  
3148 E12  
3149 F11  
3150 E11  
3151 E3  
3152 E4  
3153 F3  
3154 F4  
3155 F5  
3156 F3  
3157 F4  
3158 H11  
3159 H2  
3160 G2  
3161 H3  
3162 H4  
3163 H11  
3164 H3  
3165 H4  
3166 H5  
3167 H3  
3168 H4  
3169 B4  
3170 B4  
4100 A8  
4101 C8  
4102 B7  
4103 E4  
4104 E7  
4105 F8  
4106 F3  
4107 G7  
4108 G4  
4109 I3  
6102 B10  
6103 B11  
6104 D10  
6105 F10  
6106 F5  
6107 H5  
7100 A4  
7401 C5  
7402 C4  
7403 D4  
7404 E4  
7405 E3  
7406 E5  
7407 H4  
7408 H3  
7409 H5  
7413 A8  
7414 A7  
7415 A9  
7416 C8  
7417 D7  
7418 D9  
7419 P14

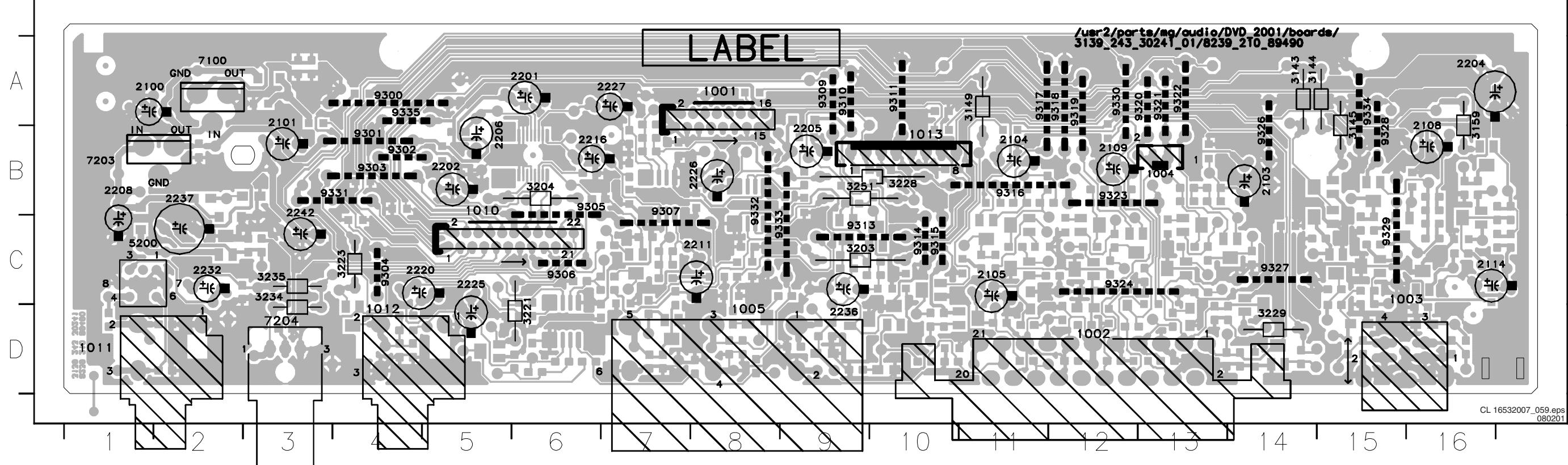
## A/V Board (Sound)



**Layout A/V Board (component side)**

1001	A8	1010	B5	2101	A3	2109	B12	2205	C4	2220	C5	2236	D9	3145	A15	3221	D6	3235	C3	7204	D3	9304	C4	9310	A9	9316	B11	9321	A13	9327	C14	9332	B8		
1002	D12	1011	B1	2102	B14	2114	C16	2206	B9	2225	C5	2242	B8	3149	A11	3223	C4	3236	C4	5200	C1	9300	A4	9305	B6	9313	A10	9318	A11	9322	A15	9328	C15	9333	A4
1003	C15	1012	D4	2104	C11	2201	A6	2208	B5	2226	B1	2243	A7	3143	A16	3228	D10	3234	C3	7203	B1	9301	B4	9306	B7	9314	C9	9319	A12	9323	C12	9329	A12	9334	A15
1004	B13	1013	B10	2105	C11	2202	B5	2211	C8	2227	A7	3144	A14	3203	B6	3229	C3	7204	B1	9302	B4	9309	A9	9315	C10	9320	A13	9326	B14	9330	A12	9335	A4		
1005	D8	2100	A1	2108	A16	2204	A16	2216	C2	2232	C2	3144	A14	3204	B6	3234	C3	7205	B1	9303	B4	9309	A9	9315	C10	9320	A13	9326	B14	9331	B4	9335	A4		

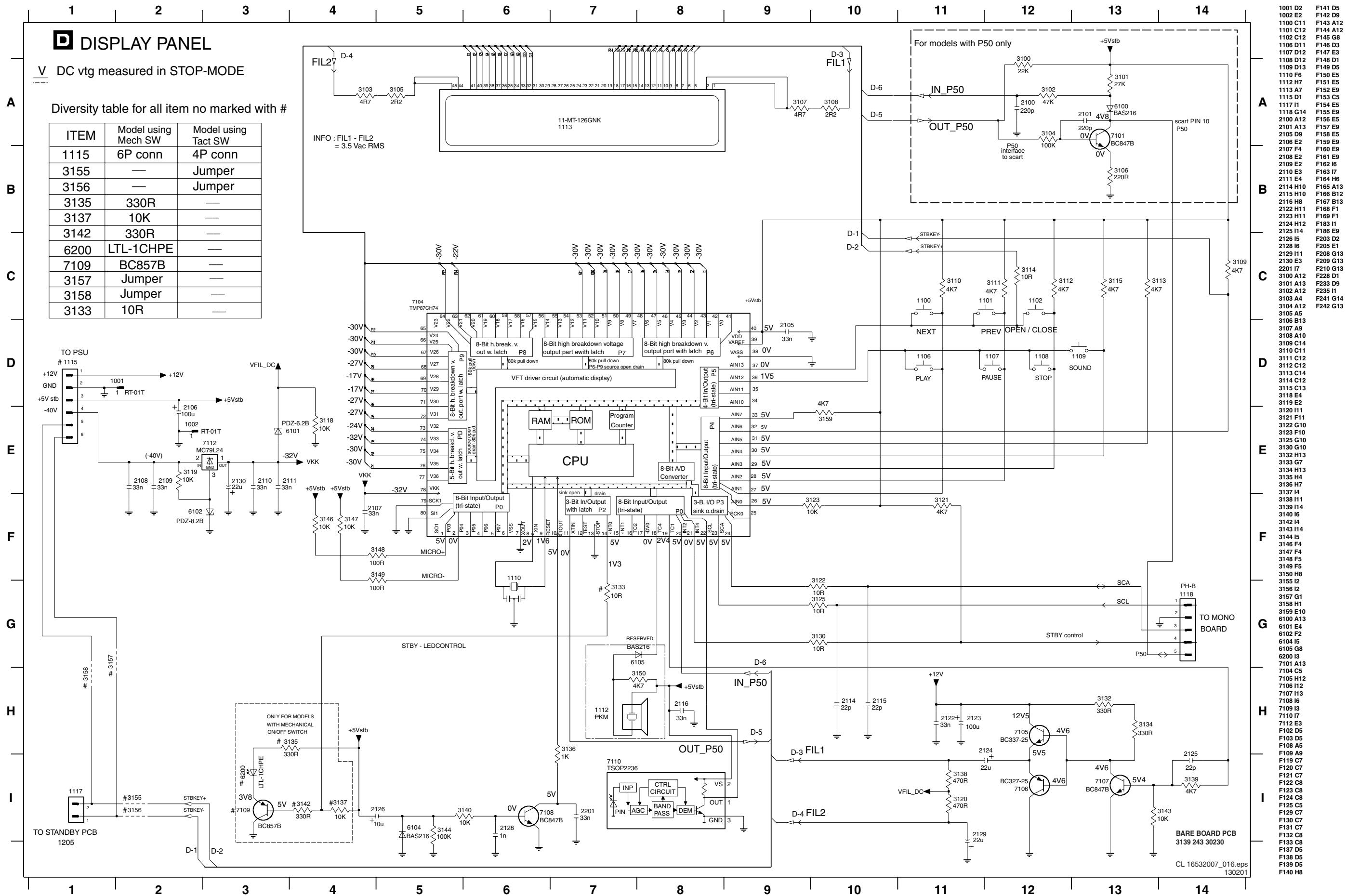
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



**A/V Board (bottom side)**

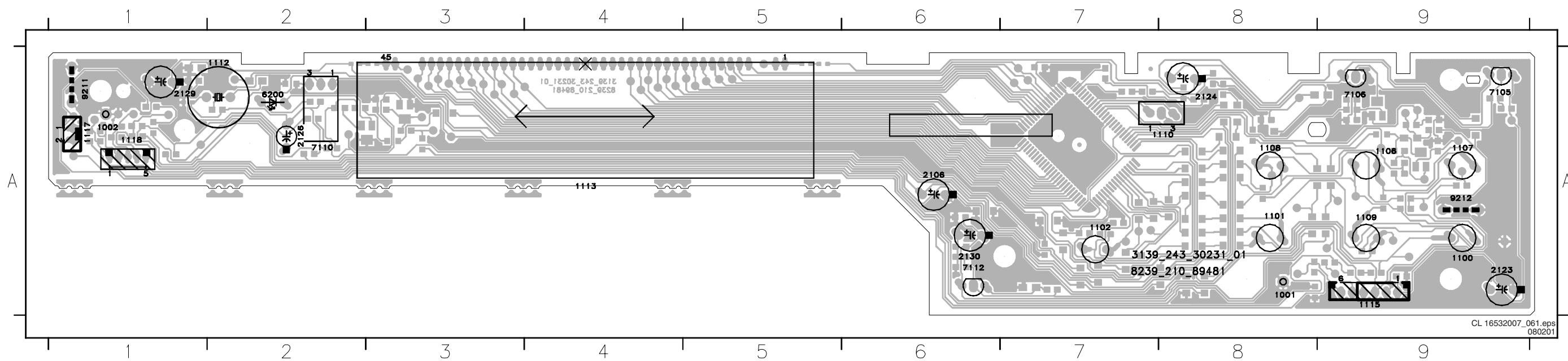
J1	D4	2210	B10	2230	D4	2248	B7	1	121	C1	3153	C1	3168	C1	3233	D3	3249	D8	4203	B8	6103	C5	7402	C2	7510	D8
D6	D6	2212	D10	2231	D14	2249	B11	2	122	C6	3154	C2	3169	C14	3236	D16	3250	D13	4204	B7	6104	C6	7403	B2	7511	D7
C2	C2	2213	D10	2233	C15	2250	B11	3	123	C6	3155	C1	3170	C10	3237	C16	3252	B8	4201	C4	6105	D5	7404	C2	7512	C15
D1	D1	2214	C10	2234	D15	2251	A14	4	124	C6	3156	B1	3170	C10	3238	C14	3253	C14	4202	B4	6106	D2	7405	B2	7513	D3
C4	C4	2215	D4	2235	D15	2252	A14	5	125	C6	3157	B1	3170	C10	3239	C14	3254	C14	4203	B1	6107	D1	7406	C2	7514	D7
D5	D5	2216	D4	2236	D11	2253	C3	6	126	C6	3158	B1	3170	C10	3240	B7	4103	B4	4204	B1	6108	D8	7407	C1	7515	D10
C4	C4	2217	D4	2237	D11	2254	C3	7	127	C6	3159	B1	3170	C10	3241	B8	4104	B6	4205	B6	6204	D7	7408	B1	7516	C10
D5	D5	2218	C10	2238	D11	2255	C4	8	128	C6	3160	B1	3170	C10	3242	B7	4105	B4	4206	B5	6205	D8	7409	C1	7517	D10
C4	C4	2219	D4	2239	D11	2256	C4	9	129	C6	3161	B1	3170	C10	3243	C8	4106	B6	4207	B1	6206	B15	7413	C4	7518	D13
D5	D5	2220	D4	2241	C9	2257	B4	10	130	C6	3162	C1	3170	C10	3244	C8	4107	B5	4208	C10	7200	B11	7414	C3	7519	D12
C4	C4	2221	D10	2243	D8	2258	B4	11	131	C6	3163	C1	3170	C10	3245	D9	4108	B7	4209	C9	7201	B10	7415	C4	7520	D9
D5	D5	2222	D10	2244	D7	2259	C4	12	132	C6	3164	B1	3170	C10	3246	D8	4109	C5	4210	C12	7202	B9	7416	C6	7521	C7
C4	C4	2223	D10	2245	B7	2260	C4	13	133	C6	3165	B1	3170	C10	3247	C7	4109	B8	4211	D4	7205	C2	7417	C6	7522	C8
D5	D5	2224	D9	2246	B8	2261	B4	14	134	C6	3166	B1	3170	C10	3248	D7	4201	B12	4312	B8	6102	D4	7418	C6	7523	D8
C4	C4	2225	B10	2247	A7	2262	D4	15	135	C6	3167	C1	3170	C10	3249	D13	4203	B8	6103	C5	7419	D6	7524	C15		
D5	D5	2226	B10	2248	B8	2263	D4	16	136	C6	3168	C1	3170	C10	3250	D13	4204	B7	6104	C6	7420	C2	7525	D7		
C4	C4	2227	B10	2249	B8	2264	D4	17	137	C6	3169	C1	3170	C10	3251	C14	4205	C4	6105	D5	7421	C2	7526	D3		
D5	D5	2228	B10	2250	B8	2265	D4	18	138	C6	3170	C1	3170	C10	3252	D13	4206	B6	6106	D2	7422	C2	7527	D10		
C4	C4	2229	B10	2251	B8	2266	D4	19	139	C6	3171	C1	3170	C10	3253	B10	4207	B5	6107	D1	7423	C1	7528	D15		
D5	D5	2230	B10	2252	B8	2267	D4	20	140	C6	3172	C1	3170	C10	3254	D13	4208	B1	6108	C14	7424	C2	7529	D10		
C4	C4	2231	B10	2253	B8	2268	D4	21	141	C6	3173	C1	3170	C10	3255	C14	4209	B6	6109	D5	7425	C2	7530	D10		
D5	D5	2232	B10	2254	B8	2269	D4	22	142	C6	3174	C1	3170	C10	3256	D13	4210	B7	6110	D2	7426	C2	7531	D10		
C4	C4	2233	B10	2255	B8	2270	D4	23	143	C6	3175	C1	3170	C10	3257	C14	4211	B6	6111	D1	7427	C1	7532	D10		
D5	D5	2234	B10	2256	B8	2271	D4	24	144	C6	3176	C1	3170	C10	3258	D13	4212	B7	6112	C14	7428	C2	7533	D15		
C4	C4	2235	B10	2257	B8	2272	D4	25	145	C6	3177	C1	3170	C10	3259	C14	4213	B6	6113	D5	7429	C2	7534	D10		
D5	D5	2236	B10	2258	B8	2273	D4	26	146	C6	3178	C1	3170	C10	3260	C14	4214	B7	6114	C13	7430	C2	7535	D10		
C4	C4	2237	B10	2259	B8	2274	D4	27	147	C6	3179	C1	3170	C10	3261	D13	4215	B6	6115	D2	7431	C2	7536	D10		
D5	D5	2238	B10	2260	B8	2275	D4	28	148	C6	3180	C1	3170	C10	3262	C14	4216	B7	6116	C13	7432	C2	7537	D10		
C4	C4	2239	B10	2261	B8	2276	D4	29	149	C6	3181	C1	3170	C10	3263	D13	4217	B6	6117	D5	7433	C2	7538	D10		
D5	D5	2240	B10	2262	B8	2277	D4	30	150	C6	3182	C1	3170	C10	3264	C14	4218	B7	6118	C13	7434	C2	7539	D10		
C4	C4	2241	B10	2263	B8	2278	D4	31	151	C6	3183	C1	3170	C10	3265	D13	4219	B6	6119	D2	7435	C2	7540	D10		
D5	D5	2242	B10	2264	B8	2279	D4	32	152	C6	3184	C1	3170	C10	3266	C14	4220	B7	6120	D1	7436	C1	7541	D10		
C4	C4	2243	B10	2265	B8	2280	D4	33	153	C6	3185	C1	3170	C10	3267	D13	4221	B6	6121	C14	7437	C2	7542	D15		
D5	D5	2244	B10	2266	B8	2281	D4	34	154	C6	3186	C1	3170	C10	3268	C14	4222	B7	6122	D5	7438	C2	7543	D10		
C4	C4	2245	B10	2267	B8	2282	D4	35	155	C6	3187	C1	3170	C10	3269	D13	4223	B6	6123	C13	7439	C2	7544	D10		
D5	D5	2246	B10	2268	B8	2283	D4	36	156	C6	3188	C1	3170	C10	3270	C14	4224	B7	6124	D5	7440	C2	7545	D10		
C4	C4	2247	B10	2269	B8	2284	D4	37	157	C6	3189	C1	3170	C10	3271</											

## Display board

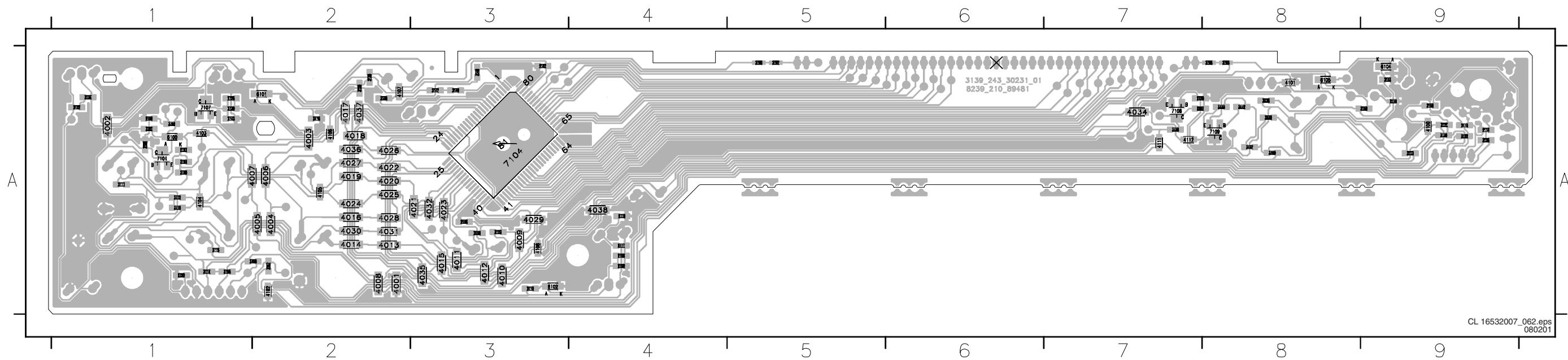


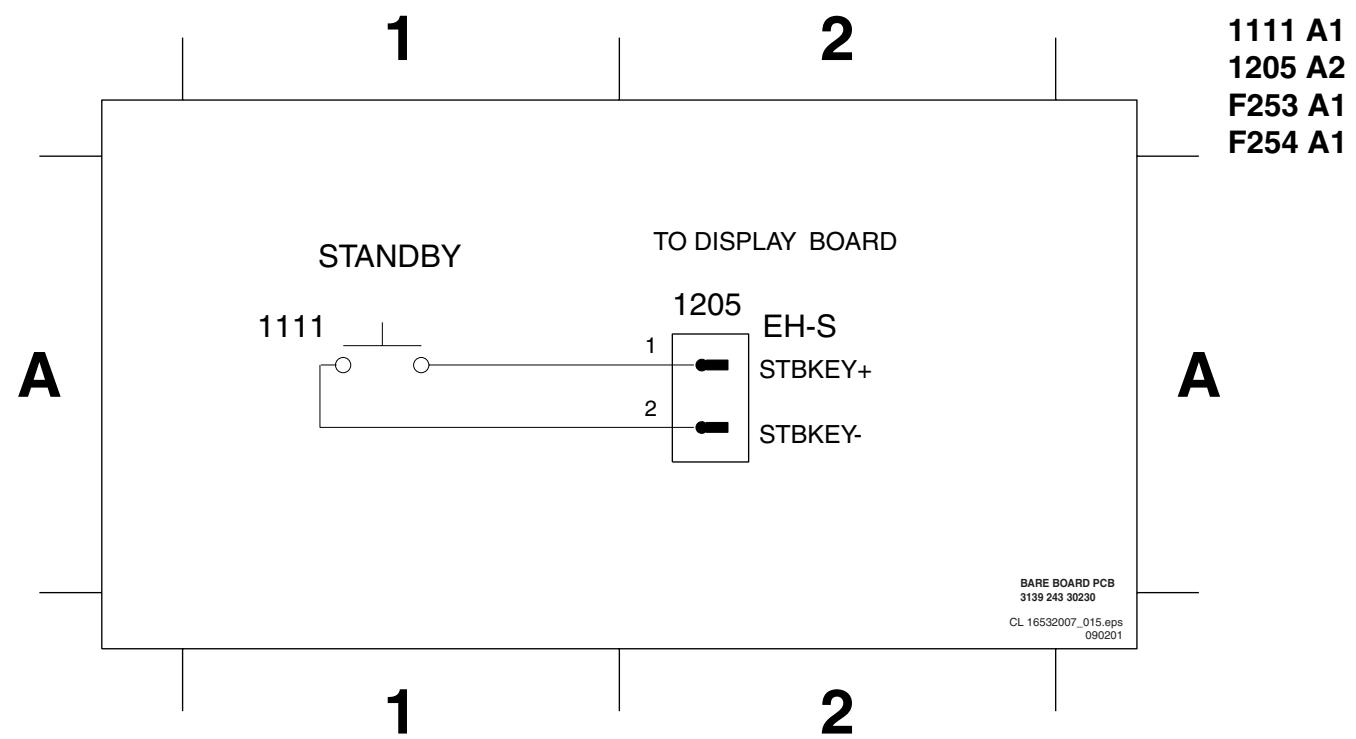
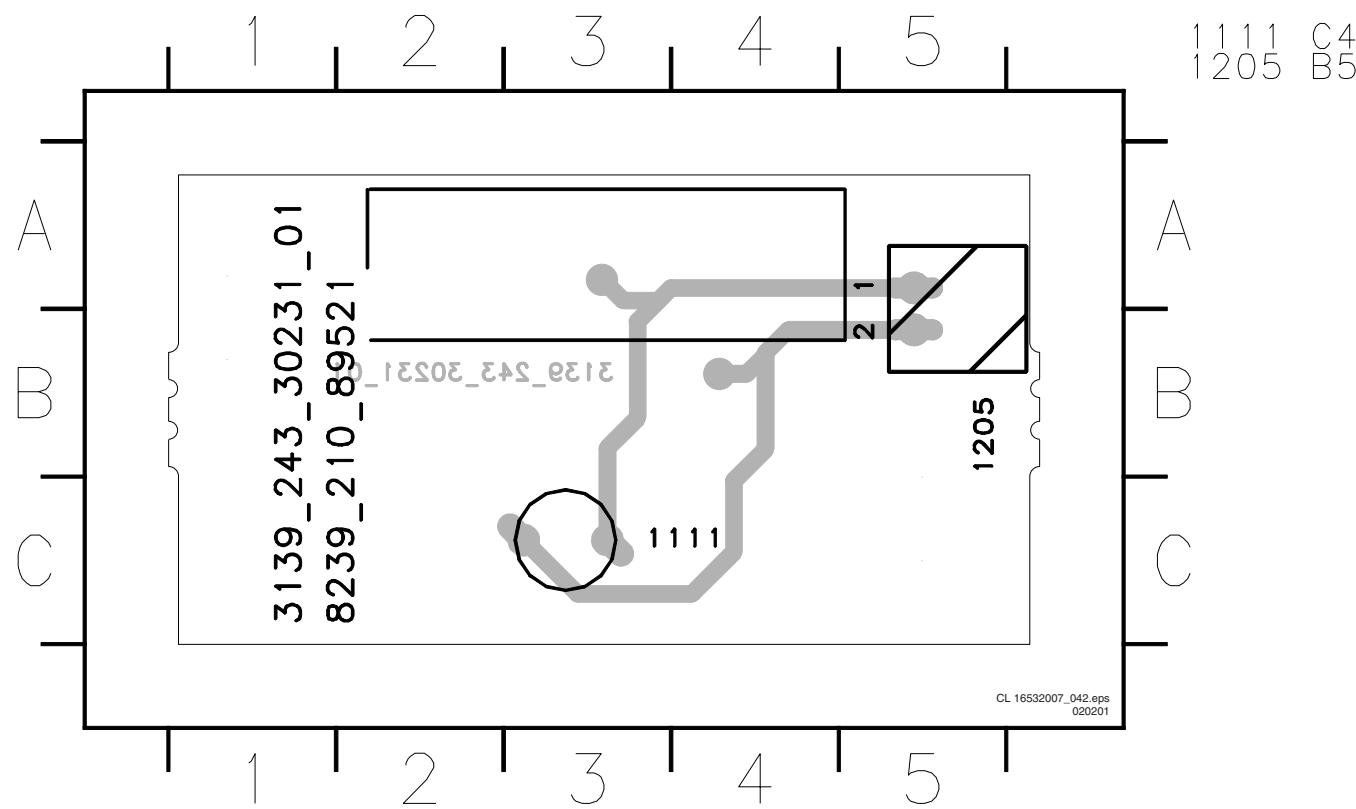
**Layout Display Board (component side)**

1001 A8 1100 A9 1102 A7 1107 A9 1109 A9 1112 A2 1115 A9 1118 A6 2106 A6 2123 A9 2126 A2 2130 A6 7105 A9 7110 A2 9211 A1  
1002 A1 1101 A8 1106 A9 1108 A8 1110 A8 1113 A4 1117 A1 2106 A6 2124 A8 2129 A1 6200 A2 7106 A9 7112 A6 9212 A9

**Layout Display Board (bottom side)**

2100 A1 2109 A4 2116 A9 3100 A1 3105 A8 3110 A1 3111 A1 3115 A1 3122 A9 3123 A9 3133 A8 3138 A2 3144 A2 3150 A9 3159 A3 4005 A2 4010 A3 4015 A3 4020 A2 4025 A2 4030 A2 4036 A2 4102 A2 4107 A2 6101 A2 7104 A3  
2101 A1 2110 A4 2122 A1 3102 A1 3107 A5 3112 A1 3119 A3 3125 A9 3134 A1 3135 A8 3140 A8 3146 A2 3155 A1 4001 A2 4006 A2 4011 A3 4016 A2 4021 A2 4026 A2 4031 A2 4037 A2 4103 A1 4108 A3 6102 A3 7107 A1  
2105 A3 2111 A4 2125 A1 3103 A8 3108 A5 3113 A9 3120 A2 3130 A9 3137 A8 3142 A8 3148 A3 3156 A9 4002 A1 4007 A1 4012 A3 4017 A2 4022 A2 4027 A2 4032 A3 4038 A4 4104 A1 4111 A7 6104 A9 7108 A7  
2107 A3 2114 A9 2128 A7 3104 A1 3109 A8 3114 A1 3121 A9 3132 A1 3137 A8 3143 A1 3149 A3 3158 A2 4003 A2 4008 A2 4009 A3 4013 A2 4018 A2 4023 A3 4028 A2 4034 A4 4100 A9 4105 A2 4112 A7 6105 A8 7109 A8  
2108 A4 2115 A9 2201 A7 3104 A1 3109 A8 3114 A1 3121 A9 3132 A1 3137 A8 3143 A1 3149 A3 3158 A2 4004 A2 4009 A3 4014 A2 4019 A2 4024 A2 4029 A3 4035 A3 4101 A8 4106 A2 6100 A1 7101 A1 6101 A2 7104 A3  
2109 A4 2116 A9 2201 A7 3104 A1 3109 A8 3114 A1 3121 A9 3132 A1 3137 A8 3143 A1 3149 A3 3158 A2 4005 A2 4010 A3 4015 A3 4020 A2 4025 A2 4030 A2 4036 A2 4102 A2 4107 A2 6102 A3 7107 A1



**Bare board Standby****Layout Bare board Standby**

## 8. Alignments

No electrical alignments available

## 9. Circuit descriptions and list of abbreviations

### 9.1 Current mode Power Supply

#### 9.1.1 Introduction

The switch mode power supply ( SMPS ) is mains isolated. The control IC 7145 ( UC 3842A ) produces pulses to drive the power switch, Mosfet 7125.

Power supply regulation is achieved by using duty cycle control at fix frequency ,of approximately 58KHz ,determined by the RC timing components.

#### 9.1.2 General Description of UC 3842A

The UC 3842 is a high performance fixed frequency current mode controller that is specifically designed for off-line and

#### 9.1.3 BLOCK DIAGRAM

DC-to-DC converter application. This integrated circuit feature a trimmed oscillator for precise duty cycle control, a temperature compensated reference, high gain error amplifier, current sensing comparator and a high current totem pole output ideally suited for driving a power MOSFET. Also included are protective features consisting of input and reference undervoltage lockouts each with hysteresis, cycle by cycle current limiting, programmable output deadtime and a latch for single pulse metering.

A representative Block diagram and Pin function description is shown in Fig 1 and Fig 2 respectively.

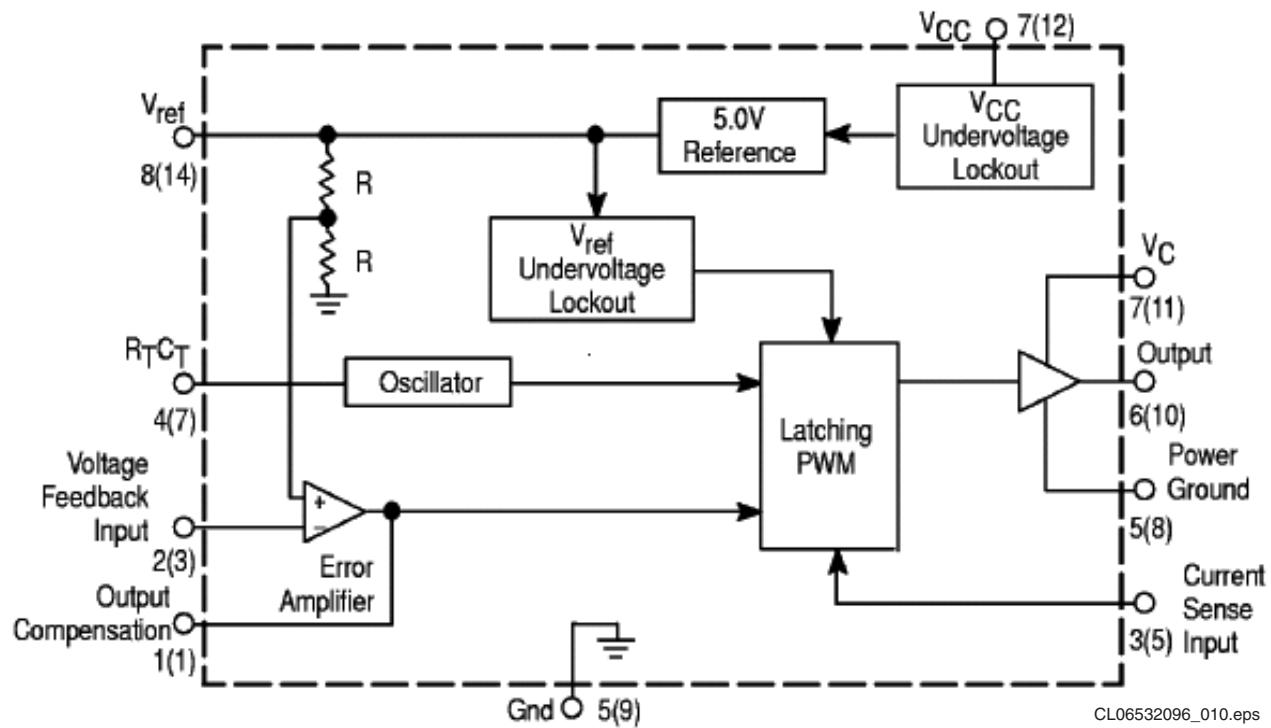


Figure 9-1

## 9.1.4 Pin function description

Pin		Function	Description
8-Pin	14-Pin		
1	1	Compensation	This pin is Error Amplifier output and is made available for loop compensation.
2	3	Voltage Feedback	This is the inverting input of the Error Amplifier. It is normally connected to the switching power supply output through a resistor divider.
3	5	Current Sense	A voltage proportional to inductor current is connected to this input. The PWM uses this information to terminate the output switch conduction.
4	7	R <sub>T</sub> /C <sub>T</sub>	The Oscillator frequency and maximum Output duty cycle are programmed by connecting resistor R <sub>T</sub> to V <sub>ref</sub> and capacitor C <sub>T</sub> to ground. Operation to 500 kHz is possible.
5	-	Gnd	This pin is the combined control circuitry and power ground (8-pin package only).
6	10	Output	This output directly drives the gate of a power MOSFET. Peak currents up to 1.0 A are sourced and sunk by this pin.
7	12	V <sub>CC</sub>	This pin is the positive supply of the control IC.
8	14	V <sub>ref</sub>	This is the reference output. It provides charging current for capacitor C <sub>T</sub> through resistor R <sub>T</sub> .
-	8	Power Ground	This pin is a separate power ground return (14-pin package only) that is connected back to the power source. It is used to reduce the effects of switching transient noise on the control circuitry.
-	11	V <sub>C</sub>	The Output high state (V <sub>OH</sub> ) is set by the voltage applied to this pin (14-pin package only). With a separate power source connection, it can reduce the effects of switching transient noise on the control circuitry.
-	9	Gnd	This pin is the control circuitry ground return (14-pin package only) and is connected back to the power source ground.
-	2,4,6,13	NC	No connection (14-pin package only). These pins are not internally connected.

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060700

Figure 9-2

## 9.1.5 Pin connection

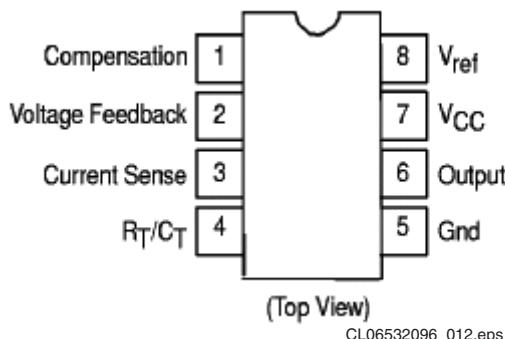


Figure 9-3

## 9.1.6 Output voltages

- +12V ( For Display board, Monoboard, A/V board ) created via D6241, C2240, L5240, C2232 (This voltage is also present during standby)
- +5V\_stby ( For Display board, Standby PCB, Monoboard ) created from +6V via R3233 and D6233 (This voltage is also present during standby)
- +6V\_stby ( Reserve ) created from D6230, C2230, L5231 (This voltage is also present during standby)
- +5V ( For Monoboard, A/V board ) derive from +6V stdby via Mosfet 7238, C2239 and it will be switch off via R3235, T7235 during Standby.
- 5V ( For Monoboard, A/V board ) created from D6250, C2250, C2259, L5222, R3259, T7255 regulator circuit and will switch off via R3258, T7257 during standby (control signal Standby is HIGH)

- 3V3 ( For Monoboard, A/V board ) The 3V3 power supply is regulated by the control loop comprising of 7201, 7131 and 7145 of the switch mode PSU. This voltage is also present during standby
- -40V ( For Display board ) created via D6261, R3260, L5260, C2260 This will not be present during standby

## 9.2 CONTROL CIRCUITRY

## 9.2.1 Mains input circuit

The mains voltage is rectified by bridge rectifier (D6118 to D6121) and filter by C2121. The DC voltage across C2121 is the DC input voltage ,approximately 300V, is the DC input to pin 1 of transformer T5131.The mains input also consists of a lighting protection R3120.

## 9.2.2 Start-up and takeover circuitry

The start-up circuitry consist R3123, R3134, R3111, D6129, C2134 and with the mains voltage input, the C2134 will charge via R3123 and R3134. When the voltage at pin 7 of IC7145 reaches the start-up threshold of min 14.5V, IC7145 will start-up and the control circuit start to operate. After start-up, the max sinking current of 17mA is required by IC7145 which is not able to be delivered by the start-up circuitry, so the takeover circuitry must be present. If the takeover circuit does not occurred, the supply voltage at pin 7 will decrease gradually till it reaches the IC7145 minimal operating voltage of 8.5Vand the IC will switch off. The whole operation cycle will repeat itself with audible hiccup sound if takeover is not present.

The takeover circuit comprises of D6133, R3135, I5135, C2134. During the control circuit start-up, the voltage across winding pin 7 and 9 will gradually built up and charged C2134

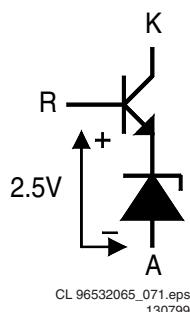
via D6133, R3135 which will takeover the supply voltage of T7145 at pin 7.

it goes into the overvoltage protection and a complete restart sequence is required.

### 9.2.3 Secondary voltage sensing

The secondary voltage regulating circuit comprise of the opto-coupler 7131 which isolate the error signal from the control IC7145 ,on the primary side, and a reference component 7201 ( TL431 ). The 7201 can be represented by two components:

- A very stable and accurate reference diode
- A high gain amplifier



**Figure 9-4**

When the output voltage increases, due to a reduction in the load, the voltage across R3205 and R3206 increases to above the internal reference voltage of about 2.5V then TL431 conduct. The current through the opto-coupler 7131 will increase due to the fact that the series resistor in 7201 decreases. This result in a increase of voltage to pin 2 of IC7145, thus reducing the on-time of FET 7125.

In the event of a decrease in output voltage (increase in load ),the control circuit will operate in the opposite way to the explainaination above.

### 9.2.4 Primary current sensing

The current through the FET 7125 resulting in a voltage drop across R3126,R3127,R3128 which is couple to pin 3 of IC7145,current sense input.The higher the input voltage, the more the primary current is limited. In this way the maximum output power of the power supply is limited.

### 9.2.5 Undervoltage protection

Two undervoltage lockout comparators have been incorporated to guarantee that the IC7145 is fully functional before the output stage is enable. The supply voltage at pin 7 and reference voltage at pin 8 of IC7145 are each monitored by separate comparators with built-in hysteresis. If the supply voltage at pin 7 of IC7145 drops below 10V ( typical ), due to a secondary voltage is short-circuit or excessive load, the drive pulse at pin 6 of IC7145 will be disabled and the controller will switch off the complete SMPS.

Remarks : In the event of the overvoltage situation remaining present, the SMPS will go in sequence of protection,start- up cycle, protection and the cycle repeats. This effect is highly audible.

### 9.2.6 Overvoltage protection

The overvoltage circuitry comprising of D6141,R3139, R3150, R3141,T7141, T7150 which is used to detect an over voltage situation on the secondary side of the transformer. After start-up, when the voltage across C2135 exceeds 18V,the overvoltage circuit will trigger the internal latch circuit, pin 1 of IC7145 and the output buffer is disabled and

### 9.3 List of abbreviations

B	Buffered Video input Blue from DVD monoboard
BC_AUX	Blue or Chroma input from AUX-scart
BC_TV	Blue or Chroma output to TV-scart
C_ENC	Buffered Chroma input from DVD monoboard
CVBS	Buffered Composite video input from DVD monoboard
DC_OFF	Control signal to switch off $\hat{U}8V_{stby}$ and $+12V_{stby}$ during standby
DIG_OUT	Digital out
FBIN_AUX	Fast blanking input from AUX-scart
FBOUT_TV	Fast blanking output to TV-scart
G	Buffered Video input Green from DVD monoboard
GIN_AUX	Video input Green from AUX-scart
GOUT_TV	Video output Green to TV-scart
HP_L	Audio output left to headphone and audio scart switch TEA6420
HP_R	Audio output right to headphone and audio scart switch TEA6420
KILL	Kill control signal for audio outputs and for soft mute of DAC
LIN_AUX	Audio input left from AUX-scart
LIN_TV	Audio input left from TV-scart
LOUT_AUX	Audio output left to AUX-scart
LOUT_TV	Audio output left to TV-scart
LRCLK	Left/Right clock
PCM_CLK	Audio system clock for DAC
PCM_OUT0	Audio serial output data
R	Buffered Video input Red from DVD monoboard
RCIN_TV	Red or Chroma input from TV-scart
RCOUT_TV	Red or Chroma output to TV-scart
RIN_AUX	Audio input right from AUX-scart
RIN_TV	Audio input right from TV-scart
ROUT_AUX	Audio output right to AUX-scart
ROUT_TV	Audio output right to TV-scart
SCL	I2C bus clock
SCLK	Audio serial bit clock
SDA	I2C bus data
SELECT	Control signal for video scart switches; high = TV, low = AUX
SELECT_HIGH	Control signal for switching fast blanking and slow blanking signals; high = TV, low = AUX
SLB_AUX	Slow blanking control signal from AUX-scart
SLB_TV	Slow blanking control signal to TV-scart
STANDBY	Control signal from ST15505 used to switch off $\hat{U}8V_{stby}$ and $+12V_{stby}$ during standby.
STEREO_L	Audio cinch output left
STEREO_R	Audio cinch output right
Y_ENC	Buffered Luma input from DVD monoboard
YCVBSIN_AUX	Luma or CVBS input from AUX-scart
YCVBSIN_TV	Luma or CVBS input from TV-scart
YCVBSOUT_AUX	Luma or CVBS output to AUX-scart
YCVBSOUT_TV	Luma or CVBS output to TV-scart
0/6/12	Scart switch control signal A/V board. 0V : loop through (AUX to TV), 6V : play 16:9 format, 12V : play 4:3 format

## 10. Spare parts list

### DVD612 /001

#### Various

0010	3139 247 52811	CAB FRONT DVD612/00X PPT
0025	3139 247 52941	BTN STANDBY DVD612/ 00X PPT
0030	3139 247 52851	WINDOW DVD612/00X PPT
0040	3139 247 52911	BTN CONTROL DVD612/ 00X PPT
0200	3139 247 52771	FRONT ASSY DVD612/ 00X
0224	3139 247 53011	BACK PLATE DVD612/00X PPT
0232	3139 247 52991	COVER TOP DVD612/00X PPT
0261	4822 321 11139	POWER CORD
0333	4822 321 11357	AUDIO CORD SET
0382	3111 170 21992	SCART CABLE (L=1.10M) BMS
0384	3139 228 87051	PROD.ASSY RC19133001/ 01 PACKED
0387	3139 246 10681	IFU DVD612/00X
1002	3139 248 80861	PCBAS AV DVD612 EU
1003	3139 248 80941	PCBAS FR DVD612 EU
1005	3122 427 22572	PSU DVD VFM EURO
1014	3104 157 11190	CWAS FLEX DVD 22 130 32S

### AV PWB

#### Various

1002	2422 025 12352	CON BM EURO H 21P F BK GRND-L
1005	4822 265 11566	3P YKC21-3930
1010	2422 025 16526	CON BM V 22P F 1.00 FFC 0.3 R
1011	4822 267 31729	

### -II-

2101	4822 124 40207	100µF 20% 25V
2103	4822 124 40207	100µF 20% 25V
2104	4822 124 40207	100µF 20% 25V
2105	4822 124 40207	100µF 20% 25V
2106	4822 126 14305	100nF 10% 16V 0603
2109	4822 124 40207	100µF 20% 25V
2111	4822 126 14494	22nF 10% 25V 0603
2112	4822 122 31765	100pF 2% 63V
2115	4822 126 13883	220pF 5% 50V
2116	4822 126 13883	220pF 5% 50V
2117	4822 126 13883	220pF 5% 50V
2200	4822 126 14305	100nF 10% 16V 0603
2201	4822 124 80231	47µF 20% 16V
2202	4822 124 80231	47µF 20% 16V
2203	4822 126 14305	100nF 10% 16V 0603
2204	4822 124 23432	100µF 20% 10V
2205	4822 124 40207	100µF 20% 25V
2206	4822 124 80231	47µF 20% 16V
2207	4822 126 14305	100nF 10% 16V 0603
2208	4822 124 11947	10µF 20% 16V
2209	3198 017 44740	0603 10V 470nF COL
2210	4822 126 14305	100nF 10% 16V 0603
2211	4822 124 40207	100µF 20% 25V
2212	3198 016 31020	0603 25V 1nF
2213	4822 126 14305	100nF 10% 16V 0603
2214	4822 122 31765	100pF 2% 63V
2215	3198 016 31020	0603 25V 1nF
2216	4822 124 11947	10µF 20% 16V
2226	4822 124 40207	100µF 20% 25V
2227	4822 124 11947	10µF 20% 16V
2228	3198 016 31020	0603 25V 1nF
2229	4822 122 31765	100pF 2% 63V
2230	3198 016 31020	0603 25V 1nF
2232	4822 124 11947	10µF 20% 16V
2233	4822 122 33777	47pF 5% 63V
2234	4822 126 14305	100nF 10% 16V 0603
2235	4822 122 33777	47pF 5% 63V
2236	4822 124 40207	100µF 20% 25V
2237	4822 124 80195	470µF 20% 10V
2243	4822 126 13883	220pF 5% 50V
2244	4822 126 13883	220pF 5% 50V
2249	4822 122 33761	22pF 5% 50V

### □-

3100 4822 051 20008 0Ω jumper . (0805)

3111 4822 051 30271 270Ω 5% 0.062W

3113 4822 051 30101 100Ω 5% 0.062W

3114 4822 051 30101 100Ω 5% 0.062W

3115 4822 117 12968 820Ω 5% 0.62W

3116 4822 051 30682 6k8 5% 0.062W

3117 4822 051 30222 2k2 5% 0.062W

3118 4822 051 30681 680Ω 5% 0.062W

3119 4822 051 30472 4k7 5% 0.062W

3120 4822 051 30759 75Ω 5% 0.062W

3121 4822 051 30271 270Ω 5% 0.062W

3122 4822 051 30101 100Ω 5% 0.062W

3123 4822 051 30101 100Ω 5% 0.062W

3124 4822 051 30759 75Ω 5% 0.062W

3125 4822 051 30682 6k8 5% 0.062W

3126 4822 117 12968 820Ω 5% 0.62W

3127 4822 051 30222 2k2 5% 0.062W

3128 4822 051 30681 680Ω 5% 0.062W

3129 4822 051 30472 4k7 5% 0.062W

3130 4822 051 30221 220Ω 5% 0.062W

3131 4822 051 30271 270Ω 5% 0.062W

3132 4822 051 30101 100Ω 5% 0.062W

3133 4822 051 30101 100Ω 5% 0.062W

3134 4822 051 30759 75Ω 5% 0.062W

3135 4822 117 12968 820Ω 5% 0.62W

3136 4822 051 30682 6k8 5% 0.062W

3137 4822 051 30222 2k2 5% 0.062W

3138 4822 051 30472 4k7 5% 0.062W

3139 4822 051 30681 680Ω 5% 0.062W

3140 4822 051 30759 75Ω 5% 0.062W

3141 4822 051 30222 2k2 5% 0.062W

3142 4822 051 30101 100Ω 5% 0.062W

3143 4822 051 30101 100Ω 5% 0.062W

3144 4822 051 30759 75Ω 5% 0.062W

3145 4822 051 30222 2k2 5% 0.062W

3146 4822 051 30101 100Ω 5% 0.062W

3147 4822 051 30101 100Ω 5% 0.062W

3148 4822 051 30759 75Ω 5% 0.062W

3149 4822 051 30222 2k2 5% 0.062W

3150 4822 051 30101 100Ω 5% 0.062W

3151 4822 051 30759 75Ω 5% 0.062W

3152 4822 051 30222 2k2 5% 0.062W

3153 4822 051 30101 100Ω 5% 0.062W

3154 4822 051 30759 75Ω 5% 0.062W

3155 4822 051 30222 2k2 5% 0.062W

3156 4822 051 30101 100Ω 5% 0.062W

3157 4822 051 30759 75Ω 5% 0.062W

3158 4822 051 30222 2k2 5% 0.062W

3159 4822 051 30101 100Ω 5% 0.062W

3160 4822 051 30759 75Ω 5% 0.062W

3161 4822 051 30222 2k2 5% 0.062W

3162 4822 051 30101 100Ω 5% 0.062W

3163 4822 051 30759 75Ω 5% 0.062W

3164 4822 051 30222 2k2 5% 0.062W

3165 4822 051 30101 100Ω 5% 0.062W

3166 4822 051 30759 75Ω 5% 0.062W

3167 4822 051 30222 2k2 5% 0.062W

3168 4822 051 30101 100Ω 5% 0.062W

3169 4822 051 30759 75Ω 5% 0.062W

3170 4822 051 30222 2k2 5% 0.062W

3171 4822 051 30101 100Ω 5% 0.062W

3172 4822 051 30759 75Ω 5% 0.062W

3173 4822 051 30222 2k2 5% 0.062W

3174 4822 051 30101 100Ω 5% 0.062W

3175 4822 051 30759 75Ω 5% 0.062W

3176 4822 051 30222 2k2 5% 0.062W

3177 4822 051 30101 100Ω 5% 0.062W

3178 4822 051 30759 75Ω 5% 0.062W

3179 4822 051 30222 2k2 5% 0.062W

3180 4822 051 30101 100Ω 5% 0.062W

3181 4822 051 30759 75Ω 5% 0.062W

3182 4822 051 30222 2k2 5% 0.062W

3183 4822 051 30101 100Ω 5% 0.062W

3184 4822 051 30759 75Ω 5% 0.062W

3185 4822 051 30222 2k2 5% 0.062W

3186 4822 051 30101 100Ω 5% 0.062W

3187 4822 051 30759 75Ω 5% 0.062W

3188 4822 051 30222 2k2 5% 0.062W

3189 4822 051 30101 100Ω 5% 0.062W

3190 4822 051 30759 75Ω 5% 0.062W

3191 4822 051 30222 2k2 5% 0.062W

3192 4822 051 30101 100Ω 5% 0.062W

3193 4822 051 30759 75Ω 5% 0.062W

3194 4822 051 30222 2k2 5% 0.062W

3195 4822 051 30101 100Ω 5% 0.062W

3196 4822 051 30759 75Ω 5% 0.062W

3197 4822 051 30222 2k2 5% 0.062W

3198 4822 051 30101 100Ω 5% 0.062W

3199 4822 051 30759 75Ω 5% 0.062W

3200 4822 051 30222 2k2 5% 0.062W

3201 4822 051 30101 100Ω 5% 0.062W

3202 4822 051 30759 75Ω 5% 0.062W

3203 4822 051 30222 2k2 5% 0.062W

3204 4822 051 30101 100Ω 5% 0.062W

3205 4822 051 30759 75Ω 5% 0.062W

3206 4822 051 30222 2k2 5% 0.062W

3207 4822 051 30101 100Ω 5% 0.062W

3208 4822 051 30759 75Ω 5% 0.062W

3209 4822 051 30222 2k2 5% 0.062W

3210 4822 051 30101 100Ω 5% 0.062W

3211 4822 051 30759 75Ω 5% 0.062W

3212 4822 051 30222 2k2 5% 0.

3155	4822 051 30008	0Ω jumper	3154	4822 117 11139	1k5 1% 0.1W	1106	2422 025 16158	CON BM H 8P F 1.00 FFC
3156	4822 051 30008	0Ω jumper	3155	4822 116 52219	330Ω 5% 0.5W	1205	2422 540 98428	RES CER SM 8M467
3159	4822 051 30472	4k7 5% 0.062W	3156	4822 051 20339	33Ω 5% 0.1W			CSTCC8.46MHz R
			3201	4822 116 52176	10Ω 5% 0.5W	1300	2422 540 98426	RES CER SM 6MHz
→			3202	4822 117 11141	1k8 1% 0.1W	1301	4822 267 51454	CSTCC6.00MHz R
6100	4822 130 11397	BAS316	3204	4822 117 11504	270Ω 1% 0.1W	1603	4822 025 16389	CONN. 11P FEMALE
6101	9965 000 04709	UDZ6.2BTE-17	3205	4822 117 11145	4k7 1% 0.1W			0.3 R
6102	4822 130 10837	UDZS8.2B	3206	4822 051 20391	390Ω 5% 0.1W	1604	2422 025 16388	CON BM V 22P F 1.00 FFC
6104	4822 130 11397	BAS316	3207	4822 051 10102	1k 2% 0.25W			0.3 R
			3233	4822 052 10228	2Ω 5% 0.33W			
→			3235	4822 116 83933	15k 1% 0.1W			
6100	4822 130 11397	BAS316	3254	4822 051 30223	22k 5% 0.062W			
			3255	5322 117 13049	470Ω 1% 0.063W 0603			
					RC22H			
7101	4822 130 60511	BC847B	3256	5322 117 13053	6k8 1% 0.063W 0603	2100	4822 126 14305	100nF 10% 16V 0603
7104	3104 123 94532	TMP87CH74F-1E29-V2.18-DVDSLAVE	3257	4822 051 30563	56k 5% 0.062W	2101	4822 126 14305	100nF 10% 16V 0603
7105	4822 130 40981	BC337-25	3258	4822 051 30103	10k 5% 0.062W	2103	4822 124 80151	47μF 16V
7106	4822 130 40854	BC327	3259	4822 051 20102	1k 5% 0.1W	2104	4822 126 13193	4.7nF 10% 63V
7107	4822 130 60511	BC847B	3260	4822 051 20101	100Ω 5% 0.1W	2105	4822 122 33761	22pF 5% 50V
7108	4822 130 60511	BC847B	3262	4822 116 83872	220Ω 5% 0.5W	2107	4822 126 13956	68pF 5% 63V CASE 0603
7110	9322 155 98667	IR RECEIVER	3263	4822 116 52249	1k8 5% 0.5W	2108	4822 126 14315	390pF 5% 50V 0603
		TSOP2236YA1(VISH)L	4xxx	4822 051 10008	0Ω 5% 0.25W (1206)	2109	2020 552 95697	
7112	4822 209 31257	MC79L24ACP	4xxx	4822 051 20008	0Ω 5% 0.25W (0805)	2110	2222 861 15222	63V 2N2 PM5
						2111	4822 126 14305	100nF 10% 16V 0603
						2112	5322 126 11578	1nF 10% 50V 0603
						2113	4822 126 14305	100nF 10% 16V 0603
						2114	4822 122 31765	100pF 2% 63V
						2115	4822 126 14305	100nF 10% 16V 0603
						2116	4822 126 14305	100nF 10% 16V 0603
						2117	4822 126 14305	100nF 10% 16V 0603
						2118	3198 017 42230	0603 50V 22nF COL
						2119	3198 017 42230	0603 50V 22nF COL
						2120	4822 126 14305	100nF 10% 16V 0603
						2121	4822 126 13879	220nF 20% 16V
						2122	3198 017 42230	0603 50V 22nF COL
						2123	4822 126 14305	100nF 10% 16V 0603
						2124	4822 126 14305	100nF 10% 16V 0603
						2125	4822 126 14305	100nF 10% 16V 0603
						2126	4822 126 14305	100nF 10% 16V 0603
						2127	4822 126 14305	100nF 10% 16V 0603
						2128	4822 126 14508	180pF 5% 50V 0603
						2129	4822 126 14508	180pF 5% 50V 0603
						2130	4822 122 33761	22pF 5% 50V
						2131	4822 126 14494	22nF 10% 25V 0603
						2136	4822 126 14305	100nF 10% 16V 0603
						2137	4822 126 14305	100nF 10% 16V 0603
						2138	4822 126 14305	100nF 10% 16V 0603
						2139	4822 126 14305	100nF 10% 16V 0603
						2140	4822 126 14241	0603 50V 330P COL R
						2141	4822 122 33761	22pF 5% 50V
						2142	5322 126 11583	10nF 10% 50V 0603
						2143	4822 126 13883	220pF 5% 50V
						2144	4822 126 13883	220pF 5% 50V
						2145	4822 126 13883	220pF 5% 50V
						2146	4822 126 14305	100nF 10% 16V 0603
						2203	4822 126 14305	100nF 10% 16V 0603
						2204	4822 126 14305	100nF 10% 16V 0603
						2205	4822 126 14305	100nF 10% 16V 0603
						2206	4822 126 14549	33nF 16V O6O3
						2207	5322 126 11578	1nF 10% 50V 0603
						2208	4822 126 14305	100nF 10% 16V 0603
						2209	4822 126 14305	100nF 10% 16V 0603
						2210	5322 126 11578	1nF 10% 50V 0603
						2212	4822 126 14305	100nF 10% 16V 0603
						2213	4822 126 14305	100nF 10% 16V 0603
						2214	3198 017 42230	0603 50V 22nF COL
						2215	4822 124 23237	22μF 6.3V
						2216	5322 126 11578	1nF 10% 50V 0603
						2226	4822 126 14305	100nF 10% 16V 0603
						2227	4822 126 14305	100nF 10% 16V 0603
						2228	4822 126 14305	100nF 10% 16V 0603
						2300	4822 126 14305	100nF 10% 16V 0603
						2301	4822 126 14305	100nF 10% 16V 0603
						2302	4822 126 14305	100nF 10% 16V 0603
						2303	4822 124 80349	47μF 20% 6.3V
						2304	3198 017 42230	0603 50V 22nF COL
						2305	4822 127 33861	0603 50V 22nF COL
						2306	4822 124 23002	10μF 16V
						2307	3198 017 42230	0603 50V 22nF COL
						2309	4822 126 14305	100nF 10% 16V 0603
						2310	4822 126 14305	100nF 10% 16V 0603
						2314	4822 126 14305	100nF 10% 16V 0603
						2315	4822 126 14305	100nF 10% 16V 0603
						2318	5322 122 33861	120pF 10% 50V
						2319	4822 126 11669	27pF
						2401	4822 126 14305	100nF 10% 16V 0603
						2402	4822 126 14305	100nF 10% 16V 0603
						2403	4822 126 14305	100nF 10% 16V 0603
						2404	4822 126 14305	100nF 10% 16V 0603
						2405	4822 126 14305	100nF 10% 16V 0603
						2406	4822 126 14305	100nF 10% 16V 0603
						2407	4822 126 14305	100nF 10% 16V 0603
						2408	4822 126 14305	100nF 10% 16V 0603

2409	4822 126 14305	100nF 10% 16V 0603	3108	4822 051 20228	2Ω2 5% 0.1W	3201	4822 117 11151	1Ω 5%
2410	4822 126 14305	100nF 10% 16V 0603	3110	4822 051 30479	47Ω 5% 0.062W	3202	4822 117 11151	1Ω 5%
2411	4822 126 14305	100nF 10% 16V 0603	3111	5322 117 13058	150Ω 1% 0.063W 0603	3203	4822 051 30105	1M 5% 0.062W
2412	4822 126 14305	100nF 10% 16V 0603		RC22H		3204	4822 051 30331	330Ω 5% 0.062W
2413	4822 126 14305	100nF 10% 16V 0603	3112	5322 117 13021	47Ω 1% 0.063W 0603	3205	4822 051 30103	10k 5% 0.062W
2418	4822 124 12095	100μF 20% 16V	3114	4822 051 20228	2Ω2 5% 0.1W	3206	4822 051 30103	10k 5% 0.062W
2419	4822 124 80349	47μF 20% 6.3V	3115	4822 051 20228	2Ω2 5% 0.1W	3208	4822 051 30272	2k7 5% 0.062W
2420	4822 124 80349	47μF 20% 6.3V	3116	5322 117 13042	3k9 1% 0.063W 0603	3209	4822 051 30472	4k7 5% 0.062W
2500	4822 126 14305	100nF 10% 16V 0603		RC22H		3210	4822 051 30392	3k9 5% 0.063W 0603
2502	3198 030 74780	EL SM 35V 4U7 PM20 COL R	3117	4822 051 30181	18Ω 5% 0.062W	3211	4822 051 30472	4k7 5% 0.062W
2503	4822 126 14305	100nF 10% 16V 0603	3118	4822 051 30681	68Ω 5% 0.062W	3212	4822 117 11152	4Ω7 5%
2504	4822 122 31765	100pF 2% 63V	3119	5322 117 13062	39Ω 1% 0.063W 0603	3213	4822 117 11152	4Ω7 5%
2505	4822 126 14494	22nF 10% 25V 0603		RC22H		3214	4822 051 30392	3k9 5% 0.063W 0603
2506	4822 124 23002	10μF 16V	3120	4822 051 30102	1k 5% 0.062W	3215	4822 051 30103	10k 5% 0.062W
2507	4822 126 14305	100nF 10% 16V 0603	3121	4822 051 30273	27k 5% 0.062W	3219	4822 051 30103	10k 5% 0.062W
2508	5322 126 11579	3.3nF 10% 63V	3122	4822 051 30471	47Ω 5% 0.062W	3220	4822 051 30103	10k 5% 0.062W
2509	4822 126 14241	0603 50V 330P COL R	3123	4822 051 30103	10k 5% 0.062W	3221	4822 051 30103	10k 5% 0.062W
2510	4822 126 14305	100nF 10% 16V 0603	3124	4822 051 30471	47Ω 5% 0.062W	3224	4822 051 30151	150Ω 5% 0.062W
2511	4822 126 14305	100nF 10% 16V 0603	3125	4822 051 30103	10k 5% 0.062W	3225	2322 704 62004	
2512	4822 126 14305	100nF 10% 16V 0603	3126	4822 051 30103	10k 5% 0.062W	3226	4822 051 30103	10k 5% 0.062W
2513	4822 126 14305	100nF 10% 16V 0603	3127	4822 051 30223	22k 5% 0.062W	3227	4822 051 30472	4k7 5% 0.062W
2514	4822 126 14305	100nF 10% 16V 0603	3128	2322 704 69109		3229	4822 051 30123	12k 5% 0.062W
2515	4822 126 14305	100nF 10% 16V 0603	3129	4822 051 30392	3k9 5% 0.063W 0603	3230	4822 051 30103	10k 5% 0.062W
2516	4822 126 14305	100nF 10% 16V 0603	3130	4822 051 20228	2Ω2 5% 0.1W	3231	4822 051 30103	10k 5% 0.062W
2517	4822 126 14305	100nF 10% 16V 0603	3131	4822 051 20228	2Ω2 5% 0.1W	3232	4822 117 13613	2Ω2 5% 0.0603
2518	4822 126 14305	100nF 10% 16V 0603	3132	4822 051 20228	2Ω2 5% 0.1W	3234	4822 117 12902	8k2 1% 0.063W 0603
2519	4822 126 14305	100nF 10% 16V 0603	3133	4822 051 20228	2Ω2 5% 0.1W	3235	4822 117 13632	100k 1% 0.063 0.62W
2520	4822 126 14305	100nF 10% 16V 0603	3134	5322 117 13047	33Ω 1% 0.063W 0603	3236	4822 051 30472	4k7 5% 0.062W
2521	4822 126 14305	100nF 10% 16V 0603		RC22H		3237	4822 051 30103	10k 5% 0.062W
2522	4822 126 14305	100nF 10% 16V 0603	3135	4822 117 13613	2Ω2 5% 0.0603	3238	4822 051 30103	10k 5% 0.062W
2523	4822 126 14305	100nF 10% 16V 0603	3137	4822 117 13613	2Ω2 5% 0.0603	3239	4822 051 30008	Ω2 jumper
2524	4822 126 14305	100nF 10% 16V 0603	3138	5322 117 13053	6k8 1% 0.063W 0603	3240	4822 051 30103	10k 5% 0.062W
2525	4822 126 14305	100nF 10% 16V 0603		RC22H		3242	4822 051 30008	Ω2 jumper
2526	4822 126 14305	100nF 10% 16V 0603	3139	4822 117 12917	1Ω 5% 0.062W CASE0603	3243	4822 051 30008	Ω2 jumper
2527	4822 126 14305	100nF 10% 16V 0603	3140	4822 051 30479	47Ω 5% 0.062W	3246	4822 051 30008	Ω2 jumper
2528	4822 126 14305	100nF 10% 16V 0603	3141	4822 117 11152	4Ω7 5%	3247	4822 051 30008	Ω2 jumper
2529	4822 126 14305	100nF 10% 16V 0603	3142	5322 117 13028	12k 1% 0.063W 0603	3249	4822 051 30008	Ω2 jumper
2530	3198 030 74780	EL SM 35V 4U7 PM20 COL R	3143	5322 117 13043	22Ω 1% 0.063W 0603	3250	4822 117 11152	4Ω7 5%
2531	3198 030 74780	EL SM 35V 4U7 PM20 COL R	3144	2322 704 69109		3251	4822 051 30008	Ω2 jumper
2532	4822 122 33777	47pF 5% 63V	3146	4822 051 30103	10k 5% 0.062W	3252	4822 051 30008	Ω2 jumper
2533	4822 122 33777	47pF 5% 63V	3147	4822 051 30103	10k 5% 0.062W	3254	4822 051 30008	Ω2 jumper
2534	5322 126 11578	1nF 10% 50V 0603	3148	5322 117 13022	22k 1% 0.063W 0603	3255	4822 051 30008	Ω2 jumper
2535	5322 126 11578	1nF 10% 50V 0603		RC22H		3256	4822 051 30008	Ω2 jumper
2600	4822 126 14494	22nF 10% 25V 0603	3153	4822 117 12139	22Ω 5% 0.062W	3258	4822 051 30008	Ω2 jumper
2601	4822 126 14247	0603 50V 1N5 COL R	3155	4822 051 30103	10k 5% 0.062W	3259	4822 117 11151	1Ω 5%
2602	4822 126 14247	0603 50V 1N5 COL R	3157	4822 051 30103	10k 5% 0.062W	3260	4822 117 11151	1Ω 5%
2603	4822 126 14305	100nF 10% 16V 0603	3158	5322 117 13017	100Ω 1% 0.063W 0603	3261	4822 051 30102	1k 5% 0.062W
2604	4822 124 12095	100μF 20% 16V		RC22H		3300	4822 117 11152	4Ω7 5%
2605	4822 126 14494	22nF 10% 25V 0603	3160	4822 051 30101	100Ω 5% 0.062W	3301	4822 051 30105	1M 5% 0.062W
2606	4822 124 12095	100μF 20% 16V	3161	4822 117 13613	2Ω2 5% 0.0603	3302	4822 051 30221	22Ω 5% 0.062W
2607	4822 124 12095	100μF 20% 16V	3162	4822 051 30101	100Ω 5% 0.062W	3304	4822 051 30272	2k7 5% 0.062W
2608	4822 124 23002	10μF 16V	3163	4822 051 30273	27k 5% 0.062W	3305	4822 051 30272	2k7 5% 0.062W
2609	4822 124 80151	47μF 16V	3164	4822 117 13613	2Ω2 5% 0.0603	3309	4822 051 30103	10k 5% 0.062W
2610	4822 126 14305	100nF 10% 16V 0603	3165	5322 117 13063	120Ω 1% 0.063W 0603	3310	4822 051 30223	22k 5% 0.062W
2611	4822 124 12095	100μF 20% 16V		RC22H		3311	4822 051 30223	22k 5% 0.062W
2614	4822 122 33777	47pF 5% 63V	3166	4822 051 30393	39k 5% 0.062W	3312	4822 051 30472	4k7 5% 0.062W
2615	4822 122 33777	47pF 5% 63V	3167	4822 051 30101	100Ω 5% 0.062W	3313	4822 051 30472	4k7 5% 0.062W
2616	4822 122 33777	47pF 5% 63V	3168	5322 117 13047	33Ω 1% 0.063W 0603	3316	4822 051 20108	1Ω 5% 0.1W
2617	4822 122 33777	47pF 5% 63V		RC22H		3317	4822 051 20108	1Ω 5% 0.1W
2618	4822 126 14305	100nF 10% 16V 0603	3169	4822 051 30101	100Ω 5% 0.062W	3318	4822 051 30472	4k7 5% 0.062W
2620	4822 122 33777	47pF 5% 63V	3170	4822 051 30101	100Ω 5% 0.062W	3319	4822 051 30479	47Ω 5% 0.062W
2621	4822 122 33777	47pF 5% 63V	3171	4822 051 30101	100Ω 5% 0.062W	3320	4822 051 30472	4k7 5% 0.062W
2622	4822 122 33777	47pF 5% 63V	3172	4822 117 13632	100k 1% 0.0603 0.62W	3321	4822 051 30682	6k8 5% 0.062W
2623	4822 122 33777	47pF 5% 63V	3173	4822 117 13632	100k 1% 0.0603 0.62W	3322	5322 117 13026	4k7 1% 0.063W 0603
2624	4822 122 33777	47pF 5% 63V	3174	4822 117 11152	4Ω7 5%		5322 117 13026	RC22H
2625	4822 122 33777	47pF 5% 63V	3175	4822 117 13613	2Ω2 5% 0.0603			
2626	4822 122 33777	47pF 5% 63V	3176	4822 051 30153	15k 5% 0.062W	3324	4822 117 13632	100k 1% 0.0603 0.62W
2627	4822 122 33777	47pF 5% 63V	3178	4822 117 11151	1Ω 5%	3325	4822 051 30682	6k8 5% 0.062W
2632	4822 124 12095	100μF 20% 16V	3179	4822 051 30221	22Ω 5% 0.062W	3326	4822 051 30479	47Ω 5% 0.062W
2633	4822 124 12095	100μF 20% 16V	3180	4822 117 13632	100k 1% 0.0603 0.62W	3327	4822 051 30682	6k8 5% 0.062W
2634	4822 126 14305	100nF 10% 16V 0603	3181	4822 051 30561	560Ω 5% 0.062W	3328	4822 051 30223	22k 5% 0.062W
2635	4822 126 14305	100nF 10% 16V 0603	3182	5322 117 13018	1k0 1% 0.063W 0603	3329	4822 051 30223	22k 5% 0.062W
2636	4822 126 14305	100nF 10% 16V 0603		RC22H		3330	4822 051 30223	22k 5% 0.062W
2637	4822 126 14305	100nF 10% 16V 0603	3183	5322 117 13017	100Ω 1% 0.063W 0603	3331	4822 051 30332	3k3 5% 0.062W
2638	4822 126 14305	100nF 10% 16V 0603		RC22H		3332	4822 051 30332	3k3 5% 0.062W
2639	4822 126 14305	100nF 10% 16V 0603	3184	2322 704 61204		3333	4822 051 30101	100Ω 5% 0.062W
2641	4822 122 33761	22pF 5% 50V	3185	4822 117 11151	1Ω 5%	3334	4822 051 30101	100Ω 5% 0.062W
			3187	4822 051 30273	27k 5% 0.062W	3335	4822 051 30101	100Ω 5% 0.062W

3502	4822 051 30223	22k 5% 0.062W	3657	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7208	9322 139 67685	IC SM MC33464N-45A (MOTA) R
3503	4822 051 30103	10k 5% 0.062W	3658	4822 051 30102	1k 5% 0.062W	7304	4822 209 16877	BA6856FP
3504	4822 051 30103	10k 5% 0.062W	3659	4822 051 30102	1k 5% 0.062W	7310	4822 209 15899	CY7C199-15C
3505	4822 051 30103	10k 5% 0.062W	3660	4822 051 30102	1k 5% 0.062W	7311	9352 637 83557	IC SM SAA7335HL/E/M2 (PHSE) Y
3506	4822 051 30103	10k 5% 0.062W	3661	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7312	4822 130 60373	BC856B
3507	4822 051 30472	4k7 5% 0.062W	3662	4822 051 30102	1k 5% 0.062W	7315	4822 130 60511	BC847B
3508	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM	3663	4822 051 30102	1k 5% 0.062W	7404	9322 144 59668	IC SM MT48LC1M16A1TG- 7S (MRN)R
3509	4822 051 30103	10k 5% 0.062W	3664	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7405	9322 144 59668	IC SM MT48LC1M16A1TG- 7S (MRN)R
3511	4822 051 30332	3k3 5% 0.062W	3665	4822 117 12139	22Ω 5% 0.062W	7501	4822 130 60511	BC847B
3512	4822 051 30332	3k3 5% 0.062W	3667	4822 051 30331	33Ω 5% 0.062W	7503	9322 151 16671	ST15505AVC
3513	4822 051 30103	10k 5% 0.062W	3669	4822 051 30008	0Ω jumper	7504	4822 242 10838	27MHZ 120P FX0-31FT
3514	4822 051 30103	10k 5% 0.062W	3671	4822 051 30222	2k2 5% 0.062W	7505	9322 156 81668	M24C32-WMN6TNKSA
3515	4822 051 30103	10k 5% 0.062W	3672	4822 051 30479	47Ω 5% 0.062W	7600	5322 209 71568	PC74HCT14T
3516	4822 051 30103	10k 5% 0.062W	3673	4822 051 30101	100Ω 5% 0.062W	7604	4822 130 60511	BC847B
3517	4822 051 30332	3k3 5% 0.062W	3677	4822 051 30008	0Ω jumper	7605	4822 209 17398	LD1117DT33
3519	4822 051 30103	10k 5% 0.062W	3678	4822 051 30008	0Ω jumper	7607	4822 130 60511	BC847B
3520	4822 051 30103	10k 5% 0.062W	3679	4822 051 30008	0Ω jumper	7608	4822 130 60373	BC856B
3521	4822 051 30103	10k 5% 0.062W	3681	4822 051 30008	0Ω jumper	7609	4822 130 60373	BC856B
3522	4822 051 30103	10k 5% 0.062W	3683	4822 051 30008	0Ω jumper	7610	4822 130 60511	BC847B
3523	4822 051 30332	3k3 5% 0.062W	3685	4822 051 30008	0Ω jumper	7611	9352 456 80115	
3524	4822 051 30101	100Ω 5% 0.062W	3686	4822 051 30223	22k 5% 0.062W	7612	4822 130 60511	BC847B
3525	4822 051 30103	10k 5% 0.062W	3687	4822 051 30223	22k 5% 0.062W	7613	4822 130 60511	BC847B
3526	4822 051 30103	10k 5% 0.062W	3688	4822 051 30472	4k7 5% 0.062W	7614	4822 130 60511	BC847B
3527	4822 051 30331	33Ω 5% 0.062W	3689	4822 051 30223	22k 5% 0.062W	7615	4822 130 60511	BC847B
3528	4822 051 30681	68Ω 5% 0.062W	3693	4822 117 12925	47k 1% 0.063W 0603	7616	9322 151 71668	IC SM MK2703STR (MICL) R
3541	4822 051 30479	47Ω 5% 0.062W	3694	4822 117 13632	100k 1% 0.063 0.62W	7617	4822 130 60511	BC847B
3542	4822 051 30479	47Ω 5% 0.062W	3696	4822 051 30472	4k7 5% 0.062W	7618	4822 130 60511	BC847B
3545	4822 051 30221	220Ω 5% 0.062W	3697	4822 117 13632	100k 1% 0.063 0.62W	7620	4822 130 60373	BC856B
3546	4822 051 30101	100Ω 5% 0.062W	3698	4822 051 30103	10k 5% 0.062W	7621	4822 130 42804	BC817-25
3548	4822 051 30008	0Ω jumper	3699	4822 051 30103	10k 5% 0.062W	7622	4822 130 60511	BC847B
3549	4822 051 30008	0Ω jumper	3700	4822 051 30472	4k7 5% 0.062W			
3550	4822 051 30101	100Ω 5% 0.062W						
3551	4822 051 30101	100Ω 5% 0.062W						
3552	4822 051 30008	0Ω jumper						
3554	4822 051 30008	0Ω jumper	5200	4822 157 11717	BLM31P500SPT			
3564	4822 051 30008	0Ω jumper	5300	4822 157 11717	BLM31P500SPT			
3566	4822 051 30008	0Ω jumper	5301	4822 157 11717	BLM31P500SPT			
3570	4822 051 30101	100Ω 5% 0.062W	5402	4822 157 11499	BLM11P600SPT			
3571	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM	5403	4822 157 11499	BLM11P600SPT			
3572	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM	5501	4822 157 70299	2.2μH (NL322522T-2R2J)			
3574	4822 051 30008	0Ω jumper	5502	4822 157 70299	2.2μH (NL322522T-2R2J)			
3605	4822 051 30008	0Ω jumper	5503	4822 157 71206	BLM21A601SPT			
3606	4822 117 12925	47k 1% 0.063W 0603	5504	4822 157 71206	BLM21A601SPT			
3607	4822 117 13632	100k 1% 0.063 0.62W	5600	4822 157 71206	BLM21A601SPT			
3608	4822 117 13632	100k 1% 0.063 0.62W	5601	4822 157 11499	BLM11P600SPT			
3609	4822 117 13632	100k 1% 0.063 0.62W	5602	4822 157 70298	15μH (NL322522T-150J)			
3610	4822 051 30103	10k 5% 0.062W	5603	4822 157 71206	BLM21A601SPT			
3611	4822 051 30103	10k 5% 0.062W	5604	4822 157 70298	15μH (NL322522T-150J)			
3612	4822 051 30103	10k 5% 0.062W	5605	4822 157 70298	15μH (NL322522T-150J)			
3613	4822 051 30103	10k 5% 0.062W	5606	4822 157 70298	15μH (NL322522T-150J)			
3614	4822 051 30103	10k 5% 0.062W	5607	4822 157 70298	15μH (NL322522T-150J)			
3615	4822 051 30103	10k 5% 0.062W	5608	4822 157 70298	15μH (NL322522T-150J)			
3616	4822 051 30103	10k 5% 0.062W	5609	4822 157 11717	BLM31P500SPT			
3618	4822 051 30223	22k 5% 0.062W	5610	4822 157 11717	BLM31P500SPT			
3619	4822 051 30223	22k 5% 0.062W						
3620	4822 051 30101	100Ω 5% 0.062W	6200	4822 130 11397	BAS316			
3621	4822 051 30101	100Ω 5% 0.062W	6301	9322 128 69685	S1D			
3622	4822 051 30101	100Ω 5% 0.062W	6302	9322 128 69685	S1D			
3624	4822 051 30101	100Ω 5% 0.062W	6303	9322 128 69685	S1D			
3625	4822 051 30101	100Ω 5% 0.062W	6600	4822 130 11528	1PS76SB10			
3626	4822 051 30102	1k 5% 0.062W						
3627	4822 051 30471	470Ω 5% 0.062W	7100	5322 130 42718	BFS20			
3628	4822 051 30471	470Ω 5% 0.062W	7101	5322 130 42718	BFS20			
3629	4822 051 30472	4k7 5% 0.062W	7102	9352 637 37518	TZA1033HL			
3630	4822 051 30221	220Ω 5% 0.062W	7103	4822 209 17229	BA5938FM			
3631	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7104	4822 209 30095	LM833D			
3632	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7105	4822 209 32073	MC34072D			
3633	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7106	5322 130 42718	BFS20			
3635	4822 051 30682	6k8 5% 0.062W	7109	4822 209 15083	AN78M09			
3636	4822 051 30682	6k8 5% 0.062W	7110	5322 130 60803	BST72A			
3637	4822 051 30332	3k3 5% 0.062W	7111	4822 130 60511	BC847B			
3642	4822 051 30103	10k 5% 0.062W	7112	4822 130 60511	BC847B			
3647	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7113	4822 130 60511	BC847B			
3648	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7114	4822 130 60511	BC847B			
3651	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7115	4822 130 60373	BC856B			
3654	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7116	4822 130 60511	BC847B			
3655	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7117	4822 209 90927	L78L05ACD			
3656	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R	7118	5322 130 60845	BC807-25			
			7119	4822 130 42804	BC817-25			
			7201	9351 869 80118				
			7202	3104 123 85860	AM29F002T/4.3.13			
			7203	4822 130 60373	BC856B			
			7207	4822 209 17231	SAA7399HL			



0382	3111 170 21992	SCART CABLE (L=1.10M) BMS
0384	3139 228 87051	PROD.ASSY RC19133001/ 01 PACKED
0387	3139 246 10711	IFU DVD612/05X
1002	3139 248 80861	PCBAS AV DVD612 EU
1003	3139 248 80941	PCBAS FR DVD612 EU
1005	3122 427 22572	PSU DVD VFM EURO
1014	3104 157 11190	CWAS FLEX DVD 22 130 32S